17-90

TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

No. 165.

JOSEPH L. HALL, APPELLANT,

vs.

MOSLER, BAHMAN & CO.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF OHIO.

FILED JANUARY 2, 1880.

SUPREME COURT OF THE UNITED STATES.

No. 165.

JOSEPH L. HALL, APPELLANT,

vs.

MOSLER, BAHMAN & CO.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF OHIO.

INDEX.

	Original.	Print.
Caption	1	1
Bill of complaint	2	1
Subpœna	10	4
Answer	12	5
Replication	22	8
Amended answer	23	9
Stipulation as to facts	25	9
Final decree	28	10
Appeal	29	10
Appeal bond	29	11
Stipulation of counsel as to record	31	11
Clerk's certificate	32	12

1 At a stated term of the circuit court of the United States within and for the sixth judicial circuit and southern district of Ohio, began and held at the court-rooms in the city of Cincinnati, on the first Tuesday of February, being the fourth day of that month, in the year of our Lord one thousand eight hundred and seventy-nine, and of the Independence of the United States of America the one hundred and third. Present the honorable John Baxter, circuit judge. Among the proceedings had were the following, to wit:

JOSEPH L. HALL
vs.
MOSLER, BAHMAN & Co. } 2025. In equity.

Be it remembered that heretofore, to wit, on the second day of February, in the year of our Lord one thousand eight hundred and seventy-five, came Joseph L. Hall, by Hatch & Parkinson and Cox, Follett & Cochran, his solicitors, and filed in the clerk's office of the court aforesaid his certain bill of complaint in this cause, clothed in the words and figures following, to wit:

2 Circuit court of the United States in and for the southern district of Ohio.

JOSEPH L. HALL
vs.
MOSLER, BAHMAN & Co. } 2025. In equity.

To the honorable the judges of the circuit court of the United States in and for the southern district of Ohio:

Joseph L. Hall, a resident the city of Cinti, in the State of Ohio, and a citizen of said State, brings this bill against Mosler, Bahman & Co., a corporation organized under and in accordance with the laws of the State of Ohio, and doing business in Cincinnati, in said State, and a citizen of said State of Ohio.

And thereupon your orator complains and says that heretofore, and before the 23rd day of July, 1867, he, your orator, was the true, original, and first inventor of a certain new and useful improvement in safes not known or used said invention, and not at the time of his application for a patent in public use or on sale with his consent or allowance.

And your orator further shows unto to your honors that your said orator, being as aforesaid the inventor of said improvement, and being a citizen of the United States, made application to the Commissioner
3 of Patents for letters patent, in accordance with the then existing acts of Congress, and having duly complied in all respects with the conditions and requisitions of said acts, on the 23rd day of July, 1867, letters patent of the United States, signed, sealed, and executed in due form of law, for the said invention or discovery, were issued to him and numbered 67045, whereby there was secured to him, his heirs, executors, administrators, or assigns, for theterm of seventeen years from the 23d day of July, 1867, the full and exclusive right of making, using, and vending to others to be used the said improvement, which said letters

patent, or a duly certified copy thereof, is here in court, ready to be produced.

And thereupon your orators complains and says, that heretofore, and before the 23rd day of July, 1867, he, your orator, was the true, original, and first inventor of a certain new and useful improvement in connecting doors and casings of safes, which said improvement was not known or used before said invention, and not at the time of his application for a patent in public use or on sale with his consent or allowance.

And your orator further shows to your honors that your said orator, being as aforesaid the inventor of said improvement, and being a citizen of the United States, made application to the Commissioner of Patents for letters patent in accordance with the then existing acts of Congress,
4 and having duly complied in all respects with the conditions and requisitions of said acts, on the 23d day of July, 1867, letters patent of the United States, signed, sealed, and executed in due form of law, for the said invention or discovery were issued to him, your said orator, which letters patent were numbered 67046, whereby there was secured to him, his heirs, executors, administrators, or assigns for the term of seventeen years from the 23d day of July, 1867, the full and exclusive right of making, using, and vending to others to be used the said improvement, which said letters patent, or a certified copy thereof, is here in court ready to be produced.

And your orator further shows unto your honors that, by virtue of the premises, he became and now is the sole and exclusive owner of said letters patent, numbered respectively 67045 and 67046, and the inventions and improvements described therein, and of all the rights and privileges granted and secured, or intended to be granted and secured thereby. And that since he became the owner thereof as aforesaid, he has invested and expended large sums of money, and has been to great trouble in and about said invention, and for the purpose of carrying on the business of manufacturing safes, and making the same profitable to himself and useful to the public, and that said invention has been and is of great benefit and advantage, and that large numbers of said safes were made accord-
5 ing to said invention, and sold by your orator and the company of which he is a member, to great advantage to the public, and that the public have generally acknowledged and acquiesced in the aforesaid rights of your orator, and your orator believe' that he will realize and receive large gains and profits therefrom if infringements by said defendant and its confederates shall be prevented.

Yet the said defendant, well knowing the premises and the rights secured to your orator as aforesaid, but contriving to injure your orator, and to deprive him of the benefits and advantages which might and otherwise would accrue unto him from said invention, after the issuing of the letters patent as aforesaid, and before the commencement of this suit, did, as your orator is informed and believes, without the license or allowance and against the will of your orator, and in violation of his rights and in infringement of the aforesaid letters patent numbered respectively 67045 and 67046, unlawfully and wrongfully, and in defiance of the rights of your orator, make, construct, use, and vend to others to be used, the said invention, and did make, construct, use, and vend to others to be used, safes and doors and casings of safes made according to and employing and containing said invention, and that it still continues so to do, and that it

is threatening to make the aforesaid safes and doors and casings for safes in large quantities, and to supply the market therewith.

6 And your orator further shows that the inventions described in said patents, numbered respectively 67045 and 67046, are capable of use and are used by defendant on one and the same safe.

All in defiance of the rights acquired by and secured to your orator as aforesaid, and to his great and irreparable loss and injury, and by which he has been and still is being deprived of great gains and profits, which he might and otherwise would have obtained, but which have been received and enjoyed, and are being received and enjoyed, by the said defendant by and through its aforesaid unlawful acts and doings.

And your orator further shows unto your honors, on information and belief, that said defendant has sold large quantities of said safes & doors & casings and has a large quantity on hand which it is offering for sale, and has made and realized large profits and advantages therefrom; but to what extent and how much exactly, your orator does not know and prays a discovery thereof. And your orator says that the use of the said invention by said defendant and its preparation for, and avowed determination to continue the same and its other aforesaid unlawful acts in disregard and defiance of the rights of your orator have the effect to and do encourage and induce others to venture to infringe said patent, in disregard of your orator's rights.

7 And your orator further shows unto your honors that he has caused notice to be given to said defendant of said infringements, and of the rights of your orator in the premises, and requested it to desist and refrain therefrom, but it has disregarded said notice, and refused to desist from said infringements, and still continues to make and sell said safes and said doors and casings for safes, and that it takes contracts, in in which it agrees to furnish to users, safes containing improvements that are expressly secured to your orator by the aforesaid letters patent, and of which improvements your orator is the exclusive owner.

And forasmuch as your orator can have no adequate relief except in this court, to the end that the defendant may be compelled to account for and pay over the income thus unlawfully derived from the violation of the rights of your orator as above, and be restrained from any further violation of said rights, your orator prays that your honors may grant a writ of injunction, restraining the defendant from any further construction, or sale, or use in any manner of said patented safes and doors and casings for safes or any part thereof, in violation of the rights of your orator, as aforesaid, and that the safes and doors and casings for safes, containing said patented improvements now in possession or use of the said defendant may be destroyed or delivered up to your orator for that purpose. And also that your honors, upon the entering of a decree for infringement, as above prayed for, may proceed to assess or cause to be assessed

8 under your direction, in addition to the profits to be accounted for by the defendant as aforesaid, the damages your orator has sustained by reason of such infringement, and that your honors may increase the actual damages so assessed to a sum equal to three times the amount of such assessment, under the circumstances of the willful and unjust infringement by said defendant, as herein set forth. And your orator prays also for a provisional or preliminary injunction, and for such other relief as the equity of the case may require and as to your honors may seem meet.

May it please your honors to grant unto your orator a writ of injunction conformable to the prayer of this bill, and also a writ of subpœna of the United States of America, directed to the said Mosler, Bahman & Co. and commanding it to appear and answer unto this bill of complaint, and to abide and perform such order and decree in the premises as to the court shall seem meet and be required by the principles of equity and good conscience.

JOSEPH L. HALL.

HATCH & PARKINSON.
COX, FOLLETT & COCHRAN.

UNITED STATES OF AMERICA,
Southern District of Ohio, ss:

On this 29th day of January, 1875, before me personally ap-
9 peared Joseph L. Hall, the above named complainant, who, being by me first duly sworn, deposes and says that he has read the foregoing bill of complaint subscribed by him and knows the contents thereof and that the same is true of his own knowledge, except as to the matters therein stated on information and belief, and as to those matters he believes it to be true.

WM. S. BATES,
Notary Public, Ham. County, Ohio.

10 And thereupon there was issued out of the clerk's office of the court aforesaid, our certain alias writ of subpœna, directed to the marshal of this district and against the said defendant, clothed in the words and figures following, to wit:

UNITED STATES OF AMERICA,
Southern District of Ohio, ss:

The President of the United States of America to the marshal of the southern district of Ohio greeting:

You are hereby commanded to summon Mosler, Bahman & Co., a corporation organized under the laws of the State of Ohio, citizens of and residents in the State of Ohio, if it be found in your district, to be and appear in the circuit court of the United States for the southern district of Ohio aforesaid, at Cincinnati, on the first Monday of April next, to answer a certain bill in chancery, filed and exhibited in said court against it by Joseph L. Hall, citizen and resident in the State of Ohio. Hereof you are not to fail under the penalty of the law thence ensuing, and have you then and there this writ, on the first Monday April.

Witness the honorable M. R. Waite, Chief Justice of the United
11 States, this ninth day of March, A. D. 1875, and in the 99th year of the Independence of the United States of America.

Attest:
[SEAL.] THOS. AMBROSE, *Clerk.*

MEMORANDUM.—The said defendant is required to enter its appearance in this suit in the clerk's office of said court on or before the first Monday of April, 1875, otherwise the said bill may be taken pro confesso.

THOMAS AMBROSE, *Clerk.*

And afterward, to wit, on the eleventh day of March, in the year last aforesaid, came the marshal of this district, to whom the said alias writ of subpœna was in form aforesaid directed and returned the same into the clerk's office of the court aforesaid, with his proceedings endorsed thereon in the words and figures following to wit:

Received this writ at Cincinnati, O., this 9th day of March, A. D. 1875, and served the same in Hamilton County by delivering a true copy hereof to Fred. Bahman, pres't, John V. Maescher, treas., of Mosler, Bahman & Co., personally.

W. R. THRALL,
U. S. Marshal,
By J. H. WEAVER, *Deputy.*

12 . And afterward, to wit, on the 10th day of May, in the year last aforesaid, came the said defendant, Mosler, Bahman & Co., by James Moore, its solicitor, and filed in the clerk's office of the court aforesaid its certain answer in this cause clothed in the words and figures following, to wit:

13 United States circuit court, southern district of Ohio.

JOSEPH L. HALL
vs.
MOSLER, BAHMAN & CO. } In equity.

The answer of Mosler, Bahman and Company, a manufacturing corporation organized under the laws of Ohio, respondent, to the bill of complaint of Joseph L. Hall above named.

This respondent, Mosler, Bahman and Company, now and at all times hereafter saving and reserving to itself all and all manner of benefit of exception which may be had or taken to the manifold errors, uncertainties, insufficiencies, and imperfections of the said bill of complaint, for answer thereto or unto so much thereof as it is advised it is material or necessary for it to answer unto, answering says that it admits upon information and belief that the letters patent, numbered 67045 and 67046, referred to on the bill of complaint, were granted to the said Joseph L. Hall, and
14 at the time named in the bill of complaint, but it denies that the said Joseph L. Hall was the original and first inventor of the inventions shown, described, and claimed in the said letters patent, or of either or any of the alleged inventions described or claimed in either or any of the said letters patent numbered 67045 and 67046. Respondent further answering says that it denies that the said inventions or either of them has been and is of great or any advantage, or that they or either of them possess any utility whatever; it denies that the public or any part thereof has acquiesced in or acknowledged any claim of said Hall to them, but on the contrary it alleges that the said alleged inventions have been in public and common use throughout the United States by all manufacturers of safes, who deemed it advisable to use the same not only long prior to the alleged inventions of said Hall, but ever since the issue of the said letters patent Nos. 67045 and 67046.

Respondent further answering denies that it has made, used, or sold

any one or more safes containing any invention secured by either of the said letters patent. Respondent further answering, upon information
15 and belief, denies that the said Joseph L. Hall was the first and original inventor of the inventions or either or any of them, or of any material or substantial part thereof, shown, described, or claimed in either of the said letters patent numbered 67045 and 67046, but on the contrary it avers that long prior to the time of said alleged inventions of the said Hall the same were fully described and shown in the following letters patent and publications, to wit:

English letters patent No. 559, granted to John Mathias Hart, dated Feb'y 28th, 1859.

English letters patent No. 1065, granted to John Chubb and Robert Grater, dated April 13th, 1865.

English letters patent No. 903, granted Milner and Ratcliff, dated March 31st, 1865.

English letters patent No. 585, granted Samuel Chatwood, dated March 2nd, 1865.

English letters patent No. 695, granted John Tann, dated March 11th, 1865, for improvement in fire and burglar proof safes.

English letters patent granted James Parish, Chas. Thatcher, and Thomas Glasdock, dated June 20th, 1865.

Rejected application for American letters patent for burglar-
16 proof safes, filed February 28th, 1855, by Richard G. Holmes and William H. Butler, the devices described within which were publicly used in the United States long prior to the alleged inventions of said Hall, which use was known, among others, to said Butler hereinafter more particularly referred to.

Letters patent of the United States No. 16087, granted to said Richard G. Holmes and William H. Butler, for "Improved burglar-proof safes," dated November 18th, 1856.

Letters patent of the United States No. 24700, granted Luke H. Miller for "Doors for iron safes," dated October 25th, 1859.

English letters patent No. 1697, granted to J. S. Holland, , 1854, for safe.

Respondent further answering, upon information and belief, denies that the said Joseph L. Hall was the first and original inventor of the inventions, or either or any of them, or of any material or substantial thereof shown, described, or claimed in either of the said letters patent numbered 67045 and 67046, but on the contrary it avers that long prior to the time of the said alleged inventions of the said Hall, the same was
17 well known and publicly made and used in divers places in the United States, and, among others, the following places, which uses were known to divers persons, among others to the following persons, to wit:

At the safe manufactory of Valentine and Butler, in the city of Brooklyn, in the county of Kings, and State of New York; at the store of the said Valentine and Butler, in the city of New York (on Broadway), in the county and State of New York; in the Oriental Bank, corner of Grand and Bowery streets, in said city of New York; in the Citizens' Bank, corner of White and Broadway streets, in said city of New York; in the State Bank of Newark, in the city of New-

ark, in the State of New Jersey; which uses were well known, among others to William H. Butler, who resides in the said city of Brooklyn; to Uriah B. Cooper, who resides at No. 290 South street, in said Brooklyn, western district; and to Ira L. Cady, who resides in said city of New York, and whose place of business is at No 100 Maiden Lane, in said city of New York.

18 At the First National Bank of Hoboken, or Hoboken City Bank (respondent is uncertain as to which is the correct designation), in the city of Hoboken, in the county of Hudson, in the State of New York; at number 12 Maiden Lane, in said city of New York; at 26 Court street, in said city of Brooklyn; and at No. 100 Maiden Lane, in said city of New York; which uses are known, among others, to William Terwilliger, who resides on Ocean avenue, in Jersey City, in the State of New Jersey; to said Ira L. Cady and to Valentine G. Hall, who resides on Fifth avenue, in said city of New York. That certain other prior uses of said inventions are known to John Farrell, who resides at No. 28 West 46th street, in said city of New York; to Jacob Weiner, who resides at Mt. Vernon, in Winchester County, in said *city* of New York; to which uses the respondent craves leave to hereafter more specifically refer when it has obtained the information requisite to make the allegations sufficient

19 At No. 139 Camden street; at the Farmers and Planters' Bank, corner of South and German streets; at the Commercial and Farmers' National Bank, corner of German and Howard streets, and at the safe manufactory and safe store, the latter on Baltimore street; of L. H. Miller & Co., all in the city of Baltimore, in Baltimore County, in the State of Maryland; which uses are known to Luke H. Miller, who resides at No. 37 Franklin street, in said city of Baltimore, William Douglass Miller, who also resides at said No. 37 Franklin street, and to Enoch Pratt and Richard Cornelius, both of whom reside in said city of Baltimore.

Respondent further answering, upon information, says that the said inventions described and claimed in the said letters patent (in all their material and substantial parts) of the United States more than two years prior to the dates of the applications by said Hall for said patents No'. 67045 and 67046, with the knowledge and consent of the said Hall, and, among others, were so publicly used with Hall's knowledge and consent at the places hereinbefore referred to, under the last allegation herein (of want of novelty), among others, which uses were known, among others, to the persons hereinbefore referred to, in connection with said prior uses, and were also so used at the factory of J. L. Hall & Co.,

20 of Cincinnati, and to Michael Henler, who resides at No. 469 Baymiller street, in the city of Cincinnati, county of Hamilton, State of Ohio.

And this respondent prays the same advantage of its aforesaid answer as if it had pleaded the several matters and things aforesaid to the bill of complaint herein, without this, that any other matter or thing in said bill of complaint intended to be answered and not herein and hereby well and sufficiently answered, traversed, or denied, confessed or avoided, is true to the knowledge or belief of this defendant. All of which things respondent is ready and willing to aver, maintain, and prove, as

this honorable court shall direct, and it prays to be hence dismissed with its costs in this behalf most wrongfully sustained.

[M. B. & CO. SAFES, CIN., O.] MOSLER BAHMAN & CO.
MAX MOSLER, *Sec'y.*

JAMES MOORE,
Of Counsel for Respondent.
DODDS & WILSON,
Of Counsel for Respondent.

21 UNITED STATES OF AMERICA,
Southern District of Ohio, ss:

On this 7th day of May, 1875, before me personally appeared Mosler, Bahman and Company, a manufacturing corporation organized under the laws of Ohio, being by me first duly sworn deposes and says that he has read the foregoing answer subscribed by him and knows the contents thereof, and the same is true of his own knowledge, except as to matters therein stated on information and belief, and as to those matters he believes it to be true.

[SEAL.] THOS. AMBROSE,
Clk U. S. District Court S. D. O.

Objections to delay in filing the foregoing answer are hereby withdrawn.
HATCH & PARKINSON.

22 And afterward, to wit, on the seventh day of June, in the year last aforesaid, came the said complainant by his said solicitors and filed in the clerk's office of the court aforesaid his certain replication to the answer of the respondent in this cause clothed in the words and figures following, to wit:

JOSEPH L. HALL
vs. } 2025. In equity.
MOSLER, BAHMAN & CO.

The replication of the above-named complainant to the answer of the above-named defendant.

This repliant, saving and reserving to himself now and at all times hereafter, all and all manner of benefit of advantage of exception which may be had or taken to the manifold insufficiencies of said answer, for replication thereunto says that he will aver, maintain, and prove his bill of complaint to be true, certain, and sufficient in law to be answered unto, and that the said answer of the said defendant is uncertain, untrue, and insufficient to be replied unto by this repliant, without this, that any other matter and thing whatsoever in the said answer contained material or effectual in the law to be replied unto and not herein and hereby well and
23 sufficiently replied unto, confessed and avoided, traversed or denied is true. All of which matters this repliant is and will be ready to aver, maintain, and prove as this honorable court shall direct and humbly prays as in and by his said bill he has already prayed.

THOMAS A. LOGAN,
Solicitor for Complainant.

And afterward, to wit, on the eleventh day of November, in the year last aforesaid, came the said defendant by its said solicitor and filed in the clerk's office of the court aforesaid its certain amended answer in this cause, clothed in the words and figures following, to wit:

JOSEPH L. HALL
vs.
MOSLER, BAHMAN & CO. } 2025. In equity.

Amendment of the answer of respondent, Mosler, Bahman & Co.

This respondent, by leave of this honorable court, first had and obtained, amends its answer in this cause by inserting, after the last paragraph on page four of the original answer, the following:

Letters patent of the United States No. 36908, granted to Neal Macneale and William B. Dodds, for improvement in locks, dated November 11, 1862.

24 And respondent prays as in its original answer is has heretofore prayed.

MOSLER, BAHMAN & CO.,
By FRED. BAHMAN, *Pres't.*

JAMES MOORE,
Of Counsel for Respondent.

And afterward, but on the same day and in the year last aforesaid, came the parties hereto and filed in the clerk's office of the court aforesaid their certain stipulation in this cause, clothed in the words and figures following, to wit:

25 Circuit court of the United States, southern district of Ohio.

JOSEPH L. HALL
vs.
MOSLER, BAHMAN & CO. } In equity. No. 2025.

JOSEPH L. HALL
vs.
MACNEALE & URBAN. } In equity. No. 2024.

Stipulation.

The said parties hereby stipulate the following as facts, which stipulation is to take the place and have all the legal effect of testimony in the above cases:

First. That at and prior to the time of the filing of the complainant's bill herein, and after the issues of the patents Nos. 67045 and 67046, dated July 23, 1867, to the plaintiff, both of the above-named defendants made and sold safes having tongues and grooves, substantially such as are shown in the model Complainant's Exhibit A, J. L. Hall.

26 Second. That Macneale & Urban (defendants in 2024 above) at and prior to the time of the filing of the complainant's bill herein, and after the issue of the aforesaid patents, made and sold safes, in the

construction of which bolts were used for fastening together the different plates of metal of which safes were composed; which said bolts were constructed and secured in said plates substantially *is* shown in the model, marked Exhibits B, C, D, E, J. L. Hall.

Third. All depositions which may be taken on behalf of either party, in either of the above-entitled cases, may be read on the trial of the other case, so far as the same may be relevant and competent; and all depositions which may be taken by either party may be taken pursuant to the forms, upon the same notice, and before the same officer as is required for taking depositions under the laws of Ohio.

Fourth. The time of complainants for taking testimony in their prima facie case is hereby extended until the fifteenth day of December,
27 1875. Defendants are to have ninety days thereafter for taking their testimony; and the complainants are to have ninety days thereafter for taking testimony in rebuttal. If either party notify the other before the expiration of these periods that the testimony upon that side is concluded, then the time of the other begins to run from such notice.

CINCINNATI, *November* 9, 1875.

28 And afterward, to wit, on the nineteenth day of February, in the year of our Lord one thousand eight hundred and seventy-nine, an entry was made upon the journal of said court in said cause, clothed in the words and figures following, to wit:

JOSEPH L. HALL
vs. } 2025. In equity.
MOSLER, BAHMAN & CO.

This day this cause came on to be heard, and was argued by counsel and submitted. On consideration whereof the court find the equities of the cause to be with the respondents. It is therefore ordered, adjudged, and decreed by the court that the bill of complaint be, and the same is hereby, dismissed, and that the respondents, Mosler, Bahman & Co., go hence without day and recover of the complainant, Joseph L. Hall, their costs herein expended, taxed at $, and execution is awarded therefore as upon judgments at law.

29 Whereupon the said complainant, by his counsel, prays an appeal to the Supreme Court of the United States, and asks the court to fix the amount of the appeal bond; and the court do allow said appeal and fix the amount of the appeal bond at $2,000.

And afterward, to wit, on the 3rd day of March, in the year last aforesaid, came the complainant, Joseph L. Hall, and with him Hall's Safe and Lock Company, a corporation, and John H. Buning, his approved sureties, and filed in the clerk's office of the court aforesaid his certain appeal bond in this cause, clothed in the words and figures following, to wit:

Supreme Court of the United States.

JOSEPH L. HALL
vs.
MOSLER, BAHMAN & CO. } 2025.

Know all men by these presents that we, Joseph L. Hall, of Cincinnati, principal, and Hall's Safe and Lock Company, or corporation, and John H. Buning, sureties, are held and firmly bound unto Mosler, Bahman & Company in the sum of two thousand dollars, to be paid to the said Mosler, Bahman and Company, their executors or administrators; to
30 which payment well and truly to be made we bind ourselves and each of us, jointly and severally, and our and each of our heirs, executors, and administrators, firmly by these presents. Sealed with our seals, dated this third day of March, 1879.

Whereas the above-named Joseph L. Hall hath taken an appeal to the Supreme Court of the United States to reverse the decree rendered in the above-entitled action by the circuit court of the United States for the southern district of Ohio:

Now, therefore, the condition of this obligation is such that if the above-named Joseph L. Hall shall prosecute his said appeal to effect, and answer all costs if he shall fail to make good his plea, then this obligation to be void; otherwise remain in full force and virtue.

HALL'S SAFE AND LOCK CO. [SEAL.]
JOSEPH L. HALL, *Prest.* [SEAL.]
JOHN H. BUNING. [SEAL.]

Sealed and delivered in the presence of—
CHANNING RICHARDS.
THOS. AMBROSE.

The above security is approved.

PHILIP B. SWING,
District Judge of the United States S. D. O., holding the Circuit Court.

31 And afterward, to wit, on the twenty-seventh day of December in the year last aforesaid, came the parties hereto and filed in the clerk's office of the court aforesaid their certain stipulation in this cause, clothed in the words and figures following, to wit:

JOSEPH L. HALL
vs.
MOSLER, BAHMAN & CO. } 2025.

It is hereby stipulated by the parties in the above case that the testimony contained in the record heretofore filed in the Supreme Court of the United States in the case of Joseph L. Hall vs. Neal McNeale and Herman Urban, No. 2024 (on the docket of the circuit court), now pending in said court upon appeal from the circuit court of the United States for

the southern district of Ohio, shall be considered herein to the same effect and purpose as if the same were a part of this transcript.

JAMES MOORE,
Counsel for Appellee.
THOS. A. LOGAN,
Counsel for Appellant.

CINCINNATI, *Dec. 27th*, 1879.

32 UNITED STATES OF AMERICA,
Southern District of Ohio, ss:

I, William C. Howard, clerk of the circuit court of the United States for the southern district of Ohio, hereby certify the foregoing to be true and correct copies of the pleadings, stipulations, final decree, and appeal bond in the case wherein Joseph L. Hall is complainant and Mosler, Bahman & Co., a corporation, is respondent, as the same remain in this office.

In testimony whereof I have hereunto put my hand and affixed the seal of this court, at Cincinnati, this 29th day of December, A. D. 1879, and in the one hundred & fourth year of the Independence of the United States of America.

Attest:
[SEAL.]

W. C. HOWARD,
Clerk U. S. Cir. C'rt S. D. O.

(Indorsement on cover:) No. 165. Joseph L. Hall, appellant, vs. Mosler, Bahman & Co. S. Ohio C. C. U. S. Filed 2nd January, 1880.

4. A countersunk bolt cannot be practically threaded and seated in a suitably threaded aperture in the safe walls.

Corry, Record, 15, p. 555.
Waterhouse, Record, 64, p. 475.
Wadman, Record, 45, p. 523.

Not so with the conical bolts. "I have never had any (conical bolts) to break. I have tried them."

Gross, Record, 488, Q. 19.

"To loosen a conical bolt, you must cut in the whole length of the bolt on one side, so that you can bend the bolt."

Hendrickson, Record, 814, 815.

"If we were to cut the plates, we would only have to go in as far as the head of the countersunk bolt went, and we could easily then remove the other part of the bolt, either if we cut the plates, or cut the head of the bolt."

Corry, Record, 560, Q. 51.

These quotations show that the difference between the bolts is a difference not of mere form or proportion, but a difference of principle, which results in producing a new effect.

"If, by changing the form and proportion, a new effect is produced, there is not simply a change of form and proportion, but a change of principle also."

Per C. J. Marshall, in Davis *vs.* Palmer, 2 Brock., 310.
Manny *vs.* Jagger, 1 Blatch., 386.
Stanley *vs.* Whipple, 2 McLean, 38.
Smith *vs.* Pearce, 2 McLean, 178.
Winans *vs.* Denmead, 15 How., 341.

Utility of the Invention.

From the time Hall received his patent, in 1867, until the present time, his device has met with increasing favor, has been adopted by nearly all safe manufacturers in the United States, and its use has become more and more common, until it is regarded as necessary to the best construction of a safe, and it is almost impossible to sell a burglar-proof safe without it.

Woolley, Record, pp. 433 to 436, incl.

Corry, superintendent of Hall Safe and Lock Company's factory, testifies that between 125,000 and 150,000 conical bolts had been used there from the time he went there, in September, 1869, to the time he gave his deposition, in March, 1877 (557, Q. 34).

Wadman testifies that about 100,000 bolts were used in Hall's factory in the four years and a half he was employed there, ending in March, 1877, and that they were put in 2,000 or 3,000 safes (518, Q. 9).

White, employed as superintendent of the burglar room in Hall's factory, from November, 1875, to March, 1877, estimates the number used in that time at 10,000 (532, Qs. 5 and 6).

Monig, a workman in Hall's factory for seven years, put in over 3,000 conical bolts himself (503, Qs. 6 and 7).

Shultze, another workman, put in between 3,000 and 4,000 conical bolts (513, Qs. 9, 10 and 11).

4,000 threaded conical bolts were used in the vault of Baltimore Safety Deposit Company alone (513, Qs. 19 and 20, 532, Qs. 7, 8 and 9).

About 500 were used in the vault of the Central Safety Deposit Company of New York (505, Q. 26).

1,326 bolts were used in the Centennial Exposition vault (White, 535, Qs. 37 and 38).

These citations are sufficient to show the extent of its use in a single factory.

The advantages over every other form of bolt or fastening device will become apparent as we compare it with the various devices which respondents allege are in anticipation of complainant's device.

The Patent is for a Combination.

The fundamental error below was in considering that this patent was a patent solely for a conical bolt. It is not so. It is a patent for a combination.

It is by no means confined, as was said below, to "any device of a conical or tapering arbor, secured in a substantial manner, in the wall or casing of a secure receptable."

But the patent extends to and includes a conical bolt, in combination with two or more plates of metal, which are of iron and steel alternately laid, or their equivalent in material

and arrangement, the bolt to be of the hardest steel or its equivalent, and conical throughout the entire series of plates it is intended to secure, seated with an accurate fit, and fastened by a key, or by riveting, or in other substantial manner, binding the plates in one compact mass, immovably at rest, not drawing them together by clamps, and leaving them constantly on the strain to burst their fastenings apart. When thus combined, the bolt offers serious obstacles to the operations of the burglar, because it cannot be driven in, nor pulled out, nor drilled through. It leaves no opening in the body of the safe, which, therefore, cannot be blown open with explosives.

While the bolt must be conical throughout the plates it is intended to secure, it need not, and in practice does not, pass through the outer or merely ornamental plate of the safe.

Though in its most approved form, the bolt has a continuous screw-thread from end to end, fitting into a similar thread, tapped into the holes through the safe in which the bolt is inserted, so that it can be screwed firmly into its place by a key —and some such thread is a necessary concomitant when the bolt is fastened—yet this is not an essential feature of the bolt, and the claim covers a bolt having a screw-thread passing through only two plates of the safe, or any number less than the whole, or a bolt, which is fastened inside by riveting or nutting, may be entirely plain and smooth throughout the walls of the safe.

It is thus seen that form, material used, and security of the combination of the parts, are prominent features of this invention.

In form, the bolts may vary in cross section from a triangle, square, or octagon to a complete circle, but no variation is permitted in one particular, *i. e.*, they must taper longitudinally within the plates they are intended to secure.

It would seem assuredly from this, that the appellant was entitled to a decree, unless some one or all of the defenses were sustained. Was such the fact?

The Defenses.

1. *Was Hall the first inventor of the method?*

It has already been stated that Hall used the drill proof conical bolts in combination with the plates of a burglar-proof safe as early as 1858 or 1859. They were put into two safes made at that time for exhibition at a State fair, and were afterwards sold to Moses Fowler and the Treasurer of Lorain County.

The bolts were put in these two safes experimentally, to test what security they would afford in case the safes were attacked by experts at the fairs where they were exhibited, or by burglars.

Hall, Record, 28, Qs. 25 and 26; 41, Qs. 89–91 and 92; 600, Q. 58.

Hall was not challenged to a test by his competitors, and no attacks were made upon the safes by burglars, so that the test of security was not afforded.

Not being satisfied that he had hit upon the best plan of inserting and securing them, and desiring to make further experiments and perfect the bolt, and being hindered in carrying out his plans by certain business changes and financial embarrassment, he used no more of them in safes until the year 1865.

Hall, Record, 24, Q. 28; 25, Q. 12; correction, p. 26; 40, Q. 88.

No drill-proof conical bolt, offered in evidence by respondents, was used as early as 1859 in combination with the plates of a burglar-proof safe; and no patent or publication describing such a bolt, in such a combination, bears date as early as 1859.

Hall commenced to use conical bolts of welded steel and iron, with threads cut full length upon the exterior surface, as described in his patent in 1867; and its use has been general and continuous since that time.

Hall, Record, 30, Q. 41; 31, Q. 42; 33, Q. 52; 188, Qs. 132, 133 and 134.

Michael Hemler, a witness produced by respondents, confirmed Hall's statements fully in regard to the use by Hall of the plain conical bolt in safes in 1859, and the purpose of such use of welded steel and iron.

1 Hemler, Record, 218, Qs. 2, 3 and 4; 224, Q. 59; 226, Qs. 72 and 73.

Added to which the negative testimony produced is very convincing.

The Dalton history shows that Mr. Dalton was furnished the affidavits of all the leading safemakers of America, England, Ireland, France, Belgium and Prussia, and that all of them, together with those who now declare anticipatory uses against Hall, then declared that the conical bolt never was known until the latter part of 1867, or the beginning of 1868, and to this universal declaration there is but one exception which we now recall, viz., Jacob Weimar, who is contradicted in that and other respects.

E. J. Woolley, who is a salesman of safes since 1852, and the patentee of a lock, testified that it was part of the education of a salesman to have a thorough knowledge of all the parts of a safe, and the various modes of structure and strength of resistance, and he had such knowledge (428); he went into the employment of Valentine & Butler, in 1870; he came into competition with the salesmen of all the leading manufacturers, having with them their models, cuts, &c. (429); traveling the whole country, from Maine to Virginia; who when competing for a sale to a banker, either met the competitor personally, or had recited to him by the banker the strong points urged by such competitor (Ans. 19, 429); who went through all the principal factories, East and West, to ascertain their best burglar-proof work (Ans. 27, 430); who was told by Valentine & Butler of all they had or knew to offer the public, and yet he never heard of such a conical bolt in such combination until the very last of 1869, or the first of 1870, and never saw one until April, 1870 (Ans. 31, 432; Ans. 37, 433). It was then in the office of Valentine & Butler.

"It was among other models and specimens of the material "used in their construction of safes, and in examining those I "saw those cone bolts. It was there as a specimen or model

" of what they could make and what I could recommend in " selling their work."

" I was told to carry the model with me, and if necessary to " effect a sale, agree to use it, and if I agreed to use it they " would construct safes with it, or upon that principle ; but as it " was still an experiment of which they had some doubts of the " efficacy, it was better not to use it just at present unless nec- " essary.

" I cannot tell exactly how long it had been known or used by " that company before, but it was certainly a new thing with " them, and they had only recently commenced using it " (Ans. 39, 133).

Hendrickson opened over six hundred safes, among them many of Terwilliger's, and Valentine & Butler's, and never found a conical bolt in any till 1868.

This Mr. Butler is the Butler of the "BUTLER REJECTED APPLICATION," whom it is claimed used the Hall bolt and combination in 1851.

True, this is only negative testimony, but such testimony is always valuable upon this issue.

" To rebut this "—*i. e.* non-invention—" the patentee must proceed * * * * by calling those persons who might have known of it ; and the more those persons, from their acquaintance with the particular trade or manufacture, were in the way of hearing of or meeting with it, the stronger the evidence will be."

Curtis on Patents, §§ 473, 474.

" The fact of making and exhibiting an article never before seen or heard of by the witness, is at least *prima facie* evidence of invention on the part of the maker."

Pennock *v.* Dialogue, 4 Wash., 538.

But the Michael Hemler before mentioned claims that he made the invention in 1859, and applied it for Hall in the Moses Fowler and Lafayette safes, and this is urged against Hall.

The whole testimony of this witness, as given in the present suit, is contradictory. His cross-examination shows the recklessness of his statements and their utter improbability. Hall contradicts him emphatically.

Hall, Record 591, Q. 1, 2 and 3.

The present testimony was given in 1876. But in 1868 he was a witness on behalf of Hall in the Farrell and Weimar interference, and did not then pretend that he made the invention.

Hemler Testimony, Record, 676.

And in 1873 he gave his affidavit to Dalton, and did not then pretend that he made the invention.

Hemler Affidavit, Record, 811.

"Testimony of a witness that he suggested an invention to a patentee, is in the nature of a confession; and this is always regarded as an uncertain kind of evidence."

Alden *v.* Dewey, 1 Story, 339.

And further:

"The declaration of a party that at a certain time he invented a certain thing is not evidence."

Cochran *v.* Waterman (MS.), App. Cases, Cranch, C. J.

Law Dig. 305, § 9.

Besides, he was then an employee of Hall, and clearly within

Agawam Co. *v.* Jordan, 7 Wall., 583.

"No suggestions from an employee, not amounting to a new method or arrangement, which is in itself a complete invention, is sufficient to deprive the employer of the exclusive property in the perfected improvement."

2. Anticipatory Patents and Uses.

Several of these are alleged, but there is no testimony showing a prior patent, or a sufficient anticipatory use, of a drill-proof conical bolt in combination with the plates of a burglar-proof safe.

The uses alleged are those only of plain bolts, which have not even the merit of being conical in shape. In fact, they are, at best, all either plain countersunk bolts, or else worse—the earlier and various forms of cylinders, both rivet and screw-headed, which head afterward developed into the conical shape,

and hence was known at first as the conical headed countersunk bolt, and subsequently, as this name was cumbersome, the bolt was called "the conical bolt" for brevity. This will account for the use of the name by many who, upon cross-examination, proved themselves wholly ignorant of the difference between any of the bolts.

The parties who are alleged to have anticipated Hall stand chronologically in this order:

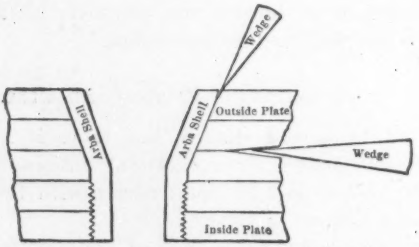
Ira L. Cady, April 29, 1851, rejected application.
Holmes & Butler, Feb'y 28, 1855, rejected application.
Theo. Auberlin, Feb'y 26, 1861, " "
John P. Love, Oct. 22, 1861, patent.
Farrell & Weimar, use and rejected application.
Terwilliger & Co., 1866.

These will be examined in their chronological order, but before discussing them, we will dispose of a claim that Hall anticipated himself in a patent issued in 1860.

Hall's Lock Arbor, 1860.

This was an improvement in a lock arbor, patented to Hall in 1860, by Letters Patent No. 30,140, which are in evidence (Record, p. 911).

The device consists of a hollow shell or thimble outside, with a spindle running through it, which communicates with the lock or bolt, revolving freely, by necessity, inside.



John Talbot Arbor Shell (Record, p. 425).

Hall, Record, 39, Q. 82, 83, 84 and 85; 593, Q. 19.
Berkmeyer, Record, 202, Q. 65, and 203, Q. 67.
Talbot, Record, 213, Q. 51, 52.
Hemler, Record, 219, Q. 12; 230, Q. 124.

It is called by Hall a double arbor, from its mode of construction.

Hall, Record, 28, Q. 25; 30, Q. 41; 43, Q. 99; 47, Q. 119.
Hemler, Record, 219, Q. 9, and 12, 22.

It is self-evident that this lock spindle and its covering bears no resemblance to the system of securing a burglar-proof safe by means of the conical bolt in combination with the plates of the safe.

The two things are wholly different. They are for different purposes. The lock arbor is for use in the lock, and only one lock can be put in the door. But the conical bolts are put in the door and in the walls also, and put in so thickly that the door and walls are studded with them.

The devices are wholly different in form and function.

The lock arbor has and can have only one function, *i. e.*, to communicate motion to the lock or bolt. It is an arbor in the strictest sense of the term.

An arbor is defined in *Brand's Dictionary of Arts, Sciences, and Manufactures:*

"Arbor. In mechanics, the principle spindle or axis which communicates motion to the other parts of a machine."

In order that it should be enabled thus to communicate motion, it must be enabled to revolve freely, and, therefore, must have open space about it to revolve in. If it were rigidly fixed in place itself, it would be incapable of imparting motion.

This truism, of itself, distinguishes it from a fastening bolt. The bolt must not have motion. It must not have open space about it. It must be rigidly fixed in order that it may rigidly hold.

The spindle corresponds in form to the shell or bushing in which it acts; it fits loosely, so as to be capable of easy revolution, and therefore has no binding power on the plates whatever, and can oppose no resistance to the process of stripping, until the plates are broken entirely loose from their other fastenings. On account of their fitting so loosely, wedges can be easily inserted between the door and the arbor, and

power applied for drawing out or breaking off the spindle; in all of which respects it differs materially from the cone bolt.

Woolley, Record, 439, Qs. 82, 85.
Gross, Record, 23, 24, p. 489.
Butler, Record, 282, p. 142; 156, p. 282.
Millward, Record, 25, 26, 27, 28, 29, 30; pp. 20 and 21.

When Hall first used this arbor, it was not conical in form, but was like a countersunk bolt, having a head and a cylindrical portion.

Hall, Record, Q. 19, p. 593; Q. 57, p. 599.
Millward, Record, Q. 36, p. 618; Q. 39, p. 621.
Gross, Record, Qs. 24, 26, p. 489.
Corry, Record, Qs. 112, 113, p. 570.

In 1868, Hall abandoned its use in that form, and adopted the more desirable form of double arbor, which was conical all the way through, having a single taper arbor.

Hall, Record, Q. 20, p. 593.
Hemler, Record, 118, p. 230.
Gross, Record, Qs. 22, 23, 24, p. 489.

In neither form were the arbors ever secreted from view, though the conical bolt always was.

Hall, Record, Q. 99, p. 43; Q. 100, p. 44.

As to construction:

"The cylindrical part had a thread cut upon its inner end, by means of which it was screwed into the inner plate, and fastened there by keys."

Berkmeyer, Record, Q. 66, p. 203.
Hall, Record, Q. 41, p. 30; Qs. 56, 57, p. 35.
Hemler, Record, Qs. 56, 57, p. 224; Q. 14, p. 220.
Woolley, Record, Q. 76, p. 438.

"It could not be nutted on the inside (as was the conical bolt) without interfering with the lock," * * "nor riveted without danger of stopping up the hole through which the spindle reached the lock."

Hall, Record, Q. 62, p. 601.
Corry, Record, Q. 114, p. 570.

"These bolts were never made of iron and steel welded longitudinally, as the bolts of 1867 were."

Hall, Record, Q. 110, p. 81.

"A cone bolt is solid, but these bolts or thimbles were hollow, having a hole all the way through them, and were much more easily broken."

Wooley, Record, 900, Q. 75, p. 438; Q. 92, p. 440.
Millward, Record, Q. 39, pp. 619, 620, 621.

As to function and use:

"The double arbor is to operate the lock. The other (the conical bolt) is to bind the plates together, holding them from being removed, and having no connection with the lock."

Hall, Record, Q. 52, p. 33.
Talbot, Record, Q. 52, p. 213.

"The difference is this: An arbor is put in a door for working the lock, and the inside of the arbor revolves in the outside part, while a conical bolt is put in a safe for the purpose not to strip off the plates."

Berkmeyer, Record, Q. 62, p. 203.
Talbot, Record, Q. 56, p. 203.

"It is simply a hardened bushing for the wall of a safe to receive the arbor of the lock. It is not designed nor adapted to secure separate plates of a wall in proper relation, but it is designed to be inserted in a safe door already constructed."

Millward, Record, Q. 36, p. 618.

"It is not drill-proof, within the meaning of the Hall conica bolt patent, as it is already drilled.

"It is nothing but a tube surrounding a small arbor, the removal of which would expose the interior of a safe.

"It is simply a bushing, with a straight threaded shank and conical head."

Millward, Record, Q. 39, p. 621.

The mode adopted in the examination of witnesses as to this arbor, was to treat it as if it were two separate devices. The outside shell was considered as of one distinct part, and the inside cylinder was treated as of another distinct part,

and the witnesses were asked whether, considering the outside disconnected from the inside, it did not perform the function of preventing the stripping of the plates.

Talbot, Record, Qs. 13, 14, pp. 208, 209; Q. 52, p. 213.
Knight, Record, Q. 18, pp. 252, 253.
Hemler, Record, Qs. 12, 13, p. 219.
Butler, Record, Q. 12, p. 230.
Berkmeyer, Record, Q. 68, p. 203.

And they answered that measurably it did.

Why, of course it did.

Any device, be it bolt, arbor or plug, having a conical shaped head, seated in the plates, and being fastened on the inside would offer some degree of resistance to the stripping of the plates. Necessarily so.

But that, in this instance, came incidentally from its form, not principally from its function. And Hall does not, and never did, claim to sustain his patent, solely on the ground of form. It is a combination patent, into which enter all the elements therein described.

Beside which, it need scarcely be said that the law does not permit anticipation of a combination by taking each piece apart, and affixing to each, separate and dissevered, a particular function as the basis of anticipation.

Some stress is laid on the fact that Hall called the conical lock arbor a conical bolt at the time of the Farrell & Weimar interference case. It appears that he did use that term, and he did it inadvertently.

He says (27, p. 591): * * * "The expression was used on account of the countersunk bolt having a small cone on. We took up the name. I can hardly tell you how, but we did. * * * My patent describes it as a 'conical key-block,' and I suppose it originated with us from something of that kind."

"Ans. 28. It was from the force of habit."

And again (38, p. 596), speaking of the 1860 arbor, when giving his deposition, he called it conical, and in explanation, said:

"I have got into the habit of using that word conical, although it is the countersunk head-bolt, and being so familiar

with it, from time to time, is the cause of my using the expression so freely."

It appears throughout this record that everybody else in the safe trade, from mere force of habit also, calls a countersunk bolt a conical bolt. Luckily for him, however, "there is no magic in names," and his rights as a patentee will not be forfeited by any *lapsus linguæ*.

There was also proof that lock-arbors with conical-shaped spindles had been used by Valentine & Butler, Lillie, Weimar, Cooper and others, before 1860, but they will not be considered.

The simple fact is that Hall invented the arbor in 1860 for its own purpose, and used it only for that purpose.

Welded Iron and Steel.

In 1867 he saw the welded iron and steel. He instantly saw its capabilities, and saw that it was such an auxiliary as would render a perfected conical bolt, if it could be perfected and used in combination with the perfected plates, a valuable invention.

The welded iron and steel could not be cut away by the burglar, nor broken by his blows. Hence, it was as strong as the bolt itself, and rendered it reciprocal protection.

The welded iron and steel could easily be threaded. The former steel plates could not be easily threaded. Hence, a thread could be cut upon the entire surface of the bolt, fitting into corresponding threads in the metal. This would not only give additional security as a fastening, but also afford further reciprocal protection.

In every point of view the new metal was a desirable adjunct of a perfected bolt. And so he set his wits to work and perfected the bolt, and never considered it perfected till then. He tells the whole story of it in his own way (Q. 52, pp. 33 and 34), and repeats it (Q. 132, 133, 134, 135. pp. 186, 187).

As matter of law, he had the right to wait to perfect his patent, taking the risk, of course, of another patent intervening meantime.

And here it is entirely appropriate to notice another matter. The point was made below that the patent does not refer specifically to this new metal. The patent calls for "plates

of alternate iron and steel," *i. e.*, alternately laid in the wall. The drawings attached to the patent show several plates of metal through which the bolt passes.

Mr. Hall was asked by respondent (61 and 62, pp. 35 and 36) if there was anything in the patent or drawing which indicated whether these plates were welded plates of different metals, or whether each plate was homogeneous.

The witness answered that there was not. But after reading the specification, he said the said patent was designed to cover the welded iron and steel plates.

Upon further examination of the drawings, he said (p. 48). that the second and fourth plates from the outside represent welded iron and steel, and must intentionally represent that metal, because they have a thread shown upon them, which would not have been the case if of pure steel.

Further, he says (166, p. 192), that he mentioned the fact to his solicitor, who prepared the drawings and application, but the solictor "did not think it necessary (to designate the plates separately), as it was all embodied in the specification;" that is, that the claim made was sufficient to include the welded iron and steel.

There is no testimony whatever offered to dispute these statements.

If the point was made with a view of escaping infringment it is unavailing.

The defendants use plates of welded iron and steel, laid consecutively in the wall.

Naeher's Affidavit, Record, p. 870.

Berkmeyer's Affidavit, Record, p. 683, 684 (Record, p. 11).

The stipulation admits the use of "different plates of metal" for the wall.

Whether these plates are, in fact, plates of different metals, *i. e.*, "alternate plates of iron and steel," and so within the exact language of the patent, or whether they are *different plates of welded iron and steel* metal, not alternately but consecutively employed, is wholly unimportant; the latter are included in the former.

Mr. Millward, our expert, examined the drawings showing the plates, and said (p. 15) that the use of the bolts, as shown and stipulated, was, in effect, precisely what is prescribed in

the patent. This was expressly corroborated by Mr. Knight, the defendants' expert, when speaking of the Farrell & Weimar bolts.

The Hall patent says the conical bolts are of the "hardest, steel" (p. 867).

The stipulation was (p. 11) that the arbors were not made of steel, homogeneously, but of steel and iron welded together.

Mr. Knight (p. 255) was endeavoring to show that the bolt described in the Farrell & Weimar application was, in every respect, the conical bolt of Hall, 1867; and said:

"Hall directs that the arbors be made of the hardest steel; Farrell & Weimar direct that the bolts be made drill-proof, and describe as their preferred bolt one made of alternate strips of steel and wrought iron welded together. * * * * * * * *I regard these two modes of manufacture as equivalents of one another in this connection.* Indeed, Farrell & Weimar * * * * * add merely the injunction *that it be drill-proof, which I understand to mean simply hardened steel. With this understanding the bolts are of course of the same identical material.*" * * *

"The substitution of one ingredient for another would not avoid the charge of infringement."

Gould *vs.* Rees, 15 Wall., 187.

Neither can it be claimed that Hall did not have the quality of metal in his mind because the patent includes "*other secure receptacles.*" Such secure receptacles mean only those secure receptacles which are ordinarily attacked by burglars, and which by having the patented combination will very much protract the labors of the burglar by opposing serious obstacles to his progress.

Difference of Degree.

We concede that a mere change in form or proportion is not invention.

But we have shown that the difference in these bolts is not only that, but that these beget a difference of principle; and, of course, a difference in principle, arising from a difference of form or proportions, is patentable.

"Form and structure are very important matters in ma-

chinery. If they enable the operator to do the work in a better manner, or with more ease, or less expense, or in less time, * * * they constitute a patentable improvement."

Bain *vs.* Morse (U. S. App. Cas.), Cranch, C. J., in Law Dig., 335.

"When the application is for a patent for a combination of machinery and materials, form and structure become *substance*. Form and structure constitute the indentity of the machine."

Ibid.

But it is not true, and can not be true as a fact in geometry, that the difference between these geometrical forms is only a difference of degree. That is to say, no mere difference of increase or decrease in geometrical proportion will change the form of a conical bolt into that of a countersunk bolt, or *vice versa*.

In order to illustrate this, the complainant produced the "DEGREE BOLTS," (p. 622), which are, in themselves, a demonstration of this assertion.

We trust it is not too much to ask for these models an especial attention, as being entirely conclusive upon the fact.

There are three sets of these :

No. 1 represents a countersunk bolt of small proportions, and a series of shells, of countersunk bolts, which may be put on the small bolt, one over the other. The result of each addition is a countersunk bolt of larger size, but the same proportions. This is purely a change in degree.

By No. 2 a change from a cylinder to a countersunk bolt of varying proportions, by the addition of conical-shaped heads is clearly shown. The cylinder grows shorter and shorter, the head longer and longer, and finally the cylinder is obliterated, and we have only the frustum of a cone.

Here we have two changes, but one form is not wholly obtained until the other is obliterated.

Take No. 3 : By placing the very small cylinder on the vertex of the cone we have a countersunk bolt with a very large head and a very small shank. Add the next size of cylinder, and we have still a countersunk bolt with much better proportions. Continue this by adding successive shells of cylinder. At each increase the head gets less and less, until finally it is obliterated and naught but a cylinder remains.

Here, again, are two changes, but only obtained by obliteration of one form.

These models are susceptible of a variety of experiments. They all prove clearly that a change from cone to countersunk bolt, or *vice versa*, is not simply a change of degree as of size or proportion, but can only be accomplished by the destruction of the essential element in the original form.

Millward (pp. 622, 623) explains the details fully.

Having disposed of these claims, we come now to consider the alleged anticipatory patents, rejected applications and uses.

The earliest of these is the so called

Cady Bolt.

This device was invented and used by Ira L. Cady in 1851, and is shown in the drawing and model attached to his application for a patent, dated April 29, 1851.

It was not a conical bolt at all, but a countersunk bolt, having a distinct head and shank, and an angle within the walls of the safe.

Millward, Record, Q. 11, p. 609.
Corry, Record, Q. 124, p. 572.

It was not drill-proof, and could not be made drill-proof, because it was designed to hold two outside plates of iron together while molten iron was poured in between, which would, of course, take the temper out of any steel or metal bolt employed.

Cady, Record, Q. 38, p. 79.
Corry, Record, Q. 126, p. 572.
Millward, Record, Q. 12, p. 609.

It was not threaded and did not interlock threaded plates, did not bind together alternate plates of steel and iron, and did not fit the aperture through which it passed, so as to operate as a conical pin holding the plates in relation to each other without drawing, and, therefore, lacked every essential and distinguishing quality of the Hall conical bolt.

Millward, Record, Q. 13, p. 610.
Corry, Record, Q. 126, p. 572.

This device was not wholly unlike complainant's in form, but was in itself impracticable, and considered dangerous by Cady himself, who shortly after descontinued its use.

Cady, Record, Q. 40, p. 79.

Fig. 1.

Reduced to ½ Size.

"Ira L. Cady. Fig. 1."
Record, page 72.

The above cut represents the bolt, and shows an outer and an inner sheet of metal filled in with chilled iron. All these sheets must be secured to make the structure burglar-proof, and therefore the bolt, if a conical bolt, should be conical to all of them. But it is not. It is countersunk to the inside sheet, and from thence has a cylinder, the angle occurring within the wall.

In describing this bolt, Cady says (cross-answer 35, p. 78):

"Through the inner sheet *it was straight.*"

"*The straight part* through the sheet was one-fourth inch."

See also Drawings and Specifications Cady Patent (Record, p. 888).

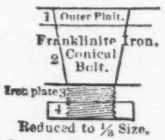
When he discontinued the foregoing, he adopted a form which had no bolt whatever, and which he describes in cross-answer 40, p. 79. This was to cause the flowing metal to form a dovetail in the plates.

Cady sold this process to Cornell, who subsequently abandoned it, because the chilled cast iron could not be made sufficiently drill-proof.

Mr. Cady's next experiment was with bolts inserted in Franklinite iron, which were used in 1855 at Cornell's, in 1858 at Valentine & Butler's, and at Herring's in 1864.

He makes this drawing of it at page 72:

Fig. 2.



Reduced to ⅛ Size.
"Ira L. Cady. Fig. 2."
Page 72.

All the plates shown here are necessary to be secured in order to be burglar-proof, but it will be seen that this bolt, like the other, does not present its taper to the whole of them, but has an angle of junction within them.

The figure is ingeniously drawn. At first sight it might be mistaken for a conical bolt. But it is greatly exaggerated. The conical head is shown extending through the whole length of the Franklinite iron. It did not in fact extend through it, and the witness had no exact idea of how far it did extend. This is amply shown upon cross-examination.

Cross-answer 47, p. 80:

"I don't think they (the bolts) go entirely through, but they enter part way through the Franklinite iron, I am certain."

Cross-answer 49, p. 81:

"I am not certain that the conical part of the bolt goes entirely through the Franklinite."

Cross-answer 89, p. 88:

"That the conical part of the bolt does extend a part of the way through the Franklinite iron, I have no doubt.

I think the conical part of the bolt is from two to two and a half inches long, and the balance of it nearly or quite straight."

Cross-answer 46, p. 80:

"I do not now say that the conical part of the bolt goes through the entire structure."

Mr. Cady's next endeavor resulted also in the production of a countersunk bolt. This was put in a safe made for Cady & Hawks, by Terwilliger & Co., in 1865, and sold to Charles Oscar Yale, and by him sold to a jeweler in the City of Rome, New York.

In speaking of this safe, Mr Cady asserts, as he does in other instances, that "conical bolts" were employed. He is loose in his language concerning them, referring to them as "bolts of this character," etc., when, as subsequently appeared, he had no idea of what a conical bolt was, and when called on confessed himself unable to define its character.

In mentioning the Fisk & Hatch safe, he had said of that also that it contained conical bolts; but when pressed he admitted that there was a head and shank to the bolt, and he guessed the distance which the head penetrated to be "considerable," because of the thickness of the safe.

Cross-answer 51, p. 81:

"I judge that the conical shape of the bolt enters into the Franklinite considerable distance, from the great thickness of the safe."

In the next answer he admits away all distinction in construction as to any of the bolts to which he has testified, and adds:

"This answer refers to all the various safes that I have mentioned."

Cross-answer 52, p. 81:

Mr. Cady emphasizes the vault door sold to Duncan, Sherman & Co. (p. 87) as an anticipation.

This was a door of the following dimensions: One plate, half inch, next three-eighths, next three-eighths, then Franklinite iron, two and three-eighth inches, and finally an inside plate of three-eighths, making the total thickness of the doors four inches.

Mr. Cady was positive that the "conical bolts" were used in this door; but when pressed on this, he was unable at first

to state the length of the taper, or how far it extended. But he gave at last some definite length, and said (Cross-answer 89, p. 88):

"I think the conical part of the bolt is from two to two and a half inches long, and the balance of it is nearly, if not quite, straight."

So that it appears that this conical bolt, like all the rest, was a countersunk, with a head two and a half inches long, and a cylinder one and a half inches long, seated in a four-inch wall.

Mr. Cady was an interested and a willing witness. He had prepared himself for months to testify, and had refreshed his memory, procured account books, and examined safes with that object.

Cross-answer 30, p. 77; Cross-answers 110 and 113, p. 92.

He was a competitor with Hall, and an infringer of Hall's patent, although he did not know how far he would be liable if the patent was sustained.

Cross-answer 23, p. 75.

Mr. Cady was questioned in order to discover what he meant when he spoke of conical bolts. He was asked for the rule, and replied:

"There can be no uniform rule, as they must vary to make good work, according to the thickness of the door."

Cross-answer 53, p. 81.

Then he was asked, what, in his opinion, would be the best proportions for a conical bolt. He said:

"I am in favor of a large bolt, * * * * *not tapering* through the entire length or thickness of the door, * * * tapering for about three-fourths the thickness of the door, the balance to be straight."

Cross-answer 54, p. 81.

"I don't mean to be understood to say that all conical bolts are alike in size, shape or length."

Cross-answer 52, p. 81.

So that, after all his preparation and declarations, he knew of no intrinsic difference between a countersunk and a conical bolt.

He did not know the elementary rule that a conical bolt must be conical throughout the entire series of plates, be they more or less. He did not know that this rule admitted of no variation, and that whether there was one thickness of the wall or another, the compulsory principle could never be mistaken or departed from. The cone must remain a cone, intact and unbroken.

He did not know this, simply because he did not know what a conical bolt is. All he knew was of countersunk bolts. He knew that with them there was no fixed rule of proportion, and need not be. Whether, with them, the head shall be longer or shorter, or the shank greater or less, is only a question of caprice, or judgment, or necessity. They may be one or another. But whichever they are, they are as they are, not upon any rule or by any inflexible standard, but because of the whims or the dictation of the moment.

There is a certain sort of judgment and experience which comes of long use with them, which suggests that the bolt shall be ship-shape in proportion; that is, that the head shall not have too much preponderance of metal for the shank, and *vice versa*, and this, of course, is governed largely by the thickness of the door.

It was sought still further to find if he could tell what constituted the dividing line between the bolts; that there might be some measure by which he could be judged when talking so flippantly of conical bolts.

The answer was just that which his previous inaccuracy had foreshadowed.

"Exactly the dividing line of what is known as the countersunk bolt or screw, and what is known as a conical bolt, it is impossible for me to determine."

Cross-answer 102, p. 90.

Cady admits that his bolts differed from the Hall bolt.

In material (Cady, Cross 73, 159). In construction: "They vary in their taper, the *shape of the heads*, some have nuts, others appear to be screwed in and keyed, others are riveted."

Cross-answer 74, 85.

And in a difference of result.

Cross-answer 76, p. 86.

When devices differ in material, construction and result, it can scarcely be said that they are alike, especially when "a bolt having the longest taper presents the greatest difficulty in being forced out."

Cross-answer 78, p. 86.

The variation in taper is of much consequence.

He admits that his first knowledge of the use of the bolt, Fig. 2, was by Herring & Co., Fisk & Hatch, and the Frontier Bank in 1865.

Cross-answer 44, p. 80.

In his affidavit to Dalton, given April 24, 1873, he admits that pure conical bolts began to be used in 1868 (Affidavit, p. 894).

See drawing, *ante*, p. (MSS., p. 14) 118, p. 93; 119, p. 94.

This is a list of safes sold by or through Mr. Cady.

1.	Otsego Co. Bank, Cooperstown, N. Y.,	sold	1851 or 1852
2.	Duncan, Sherman & Co., Vault,	" "	1871
3.	" " Safe	" "	1851 or 1852
4.	Chatham Bank,	" "	1851 or 1852
5.	Frontier Bank, Potsdam,	" "	1864 or 1865
6.	Fisk & Hatch,	" "	1864 or 1865
7.	Crystal Palace, Butler, Safe,	" "	1851 or 1852
8.	Charles Oscar Yale, Rome,	" "	1865
9.	Brown Bros.,	" "	1867 or 1868
10.	Bowery Savings Bank,	" "	1866

Of the above, 1, 3 and 4 contained bolts like those in Cady, Fig. 1, and, therefore, need no farther comment.

5, 6 and 8 contain bolts like Cady's, Fig. 2. Number 9 has no dimensions given or remembered. Number 10 is merely mentioned as "conical" bolts.

We have before seen that there is no reliance to be placed on that term when used by him.

No. 7 is Butler's "Red Burglar Safe," to be discussed hereafter.

No. 2 is a safe made since 1870, and therefore cannot affect this issue.

From which it appears that Mr. Cady fails, after selecting ten burglar safes, to find one in which he could show there was a drill-proof conical bolt presenting its taper to every part of the safe walls.

His next effort was in 1868, a year after Hall's patent.

The Holmes & Butler Bolt.

About the year 1853, W. H. Butler built a safe for exhibition at the Crystal Palace Fair, New York, called the "Red Burglar" or "Red Panel" safe, in which he says he used bolts of steel similar to bolt "D" in Holmes & Butler's rejected application, filed February 28, 1855.

Butler, Record, Q. 2 and 3, p. 118; Q. 82, p. 133.

Unfortunately for us, neither the safe nor any of the bolts can be found. We have therefore to rely on the statements of the witness as to the form and dimensions of the bolt, its length of taper, etc.

Enough appears to show that this bolt was not a conical bolt, but a countersunk head-bolt, having a conical head and a cylindrical shank, forming a junction angle within the walls of the safe.

The head of the bolt was made larger, in proportion to the hole in the safe, than the rest of the bolt, and was slightly crowned at its outer extremity.

Butler, Record, Q. 2 and 3, p. 118.

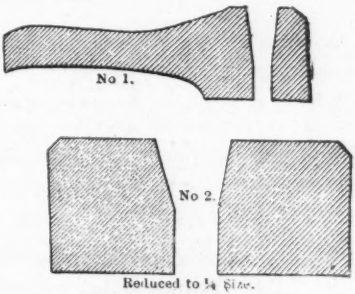
It is apparent that the bolt described by him was intended to operate only as a draw-bolt, both on account of the presence of a distinct head and a cylindrical shank, and because the outer extremity of the head is enlarged, so that any effort to drive it into the hole or to make a tight fit must necessarily draw the plates themselves close together, and throw a strain upon the bolt and its fastenings.

Throughout his deposition, taken in this case, Mr. Butler everywhere speaks of the bolt as having a *head*, varying somewhat in thickness and taper, but still being a *head*.

He says (A. 20, p. 122), that the form of bolt was first suggested to him by "the necessity for a thicker and stronger *head*" than the ordinary countersunk rivet head; that "the

head was sometimes made by riveting it or *heading* it when the safe was made; at other times the *head* was made on the rivet in the usual way," etc.

And again (Q. 21, pp. 122 and 123): We had three or four dies, varying in thickness. "The bolts were heated, then driven into these dies *to form a head*." "*The heads* then would vary in length, according to the thickness of the die, without regard to the length of the cylinder or the shank of the bolt."



Reduced to ¼ Size.

"Butler, No. 1 and 2."
Record, page 142.

It will appear at a glance at his drawing (p. 142) that none but countersunk headed bolts can be struck in such dies.

When examined in chief, in the present deposition (Quest. 23, 123 old record), he was shown the Hall bolt in Fig. 3 of Hall's Patent, 67,046, and asked if there was any difference in principle between it and the bolts used by him prior to 1865.

He said, "I should think the principle and the object of using them was the same."

Answer 23, 123.

That deposition was made in 1876.

But in 1875 he made a deposition in a case then pending between Hall and another respondent, and had a model of his "1865" bolt before him. He was then asked (Cross-Q. 88, 700), "Taking it as a whole, and regarding it for the uses for which it is designed, I again ask you if you consider the bolt in Fig. 3 of Hall's patent to be the bolt shown in the model referred to?"

He answered: "I should think not, taking it in the manner it is used."

"Do you consider said bolt, Fig. 3, Hall's patent, taken as a whole, regarding the uses for which it is designed, to be the same bolt used by you in the Red Panel Safe and the safes you made subsequent to the Red Panel Safe?"

Cross-Q. 89, 700.

"No; I don't think it has the same effect, and could not be used in the same manner."

Ibid.

When cross-examined in the present deposition to know if they were identical in principle, he replied:

"I don't know what Joseph L. Hall claims, in his patent, for conical bolts. If it proves to be like the drawing that I had in my hand this morning, *I have never seen them used, either by ourselves or anyone else, to my knowledge.*"

Cross-answer 40, p. 125.

The same question was put to him as to the bolt "D," which was his bolt in the "Red Burglar Safe" and in the rejected application. He replied:

"The object may be the same. *To a certain extent* it effects the same purpose. *It could not be used the same nor in the same manner.*"

Cross-answer 43, p. 126.

He was asked to compare Hall's bolt with the drawing of his own model. He answered:

Ans. 54. "I should not consider it the same. The principle may be the same. *It ain't the same bolt*" (p. 128).

Ans. 55. "To express myself, I would say the object of using the bolts was the same. They are not made alike in form. They are not made by the same process; they are not put in in the same manner" (p. 128).

Ans. 56. "They are certainly different in that respect—different in shape—and would have been applied in an entirely different manner I do not consider them the same because the *taper extends the whole length of the bolt*, and the thread is cut on the taper. In the Butler bolt the thread is always cut on the *cylinder*."

Pages 128, 129.

Now, as the alleged anticipation relates solely to the bolts used in the Red Panel or Red Burglar Safes, it being admitted that those subsequently used were the same, these disclaimers certainly should end that branch of the inquiry. But the testimony of this witness becomes exceedingly instructive in another point of view.

He was a safemaker of long experience and reputation in the City of New York. He was thought to be versed, and thought himself to be versed in all that pertains to his art. He was confident, in chief, that he knew all about conical bolts and had used them for years. He was positive he had used them in the safe alluded to. He had the words " conical bolts " trippling by on his tongue, and he had dies in which he was sure conical bolts had been swedged.

As we have seen he was mistaken in all this. But by following his testimony we can see how he, with others, fell into the error of considering a countersunk bolt to be a conical bolt. It came by watching the progress of the original rivet from its primitive form.

In iron-working, the early use of the rivet was not only to unite substances, but to draw them forcibly together. This use prevails to-day, as in boiler-making. The rivet is inserted, red hot, and expanded. When it cools and contracts, it compresses the boiler-plates to a steam-tight joint.

But they applied the rivet and screw to another purpose in safe-making. They had " them made especially with long heads to fit into a countersunk, and be riveted on the other end. The object was to prevent their being driven in, or the plates stripped off."

They had them made with these long heads because the smaller would not serve the purpose, thus showing the necessity for a *thicker, stronger head.*

Butler, Record, 20, p. 122.

These larger made rivets, with thicker, stronger heads certainly were not conical bolts. They were the first form of the countersunk bolt, and their heads got larger and thicker and more conical from the necessities of the case. And inasmuch as this conical head was the prominent feature, and as the shank was never thought of, the bolts came to be called conical bolts.

Thus Butler says of them (Answer 89, p. 134.):

"When *these cone bolts* were first used, they were unquestionably a great deal stronger than the screws and rivets that were used at that time."

Having thus, from the earliest time, and without any thought upon the nomenclature of bolts, accustomed himself to regard a larger headed screw, fitting into a countersunk space, as a *cone bolt*, it is not at all surprising that thereafter every bolt countersunk or otherwise, which was a little larger than the primitive size, should be called by him and others, a pure conical bolt. As heretofore stated, Hall committed a similar error in speaking of his 1860 lock arbor in the Farrell and Weimar interference.

If persons so experienced could fall into this error, it is but matter of course that others less experienced and less intelligent should do so likewise.

The power of the rivet to draw was then, and still is, by many safemakers, deemed valuable. It was to this that Butler looked in making his bolt. It was a prime quality with him. He describes it fully.

Record, Answer 2, p.

"The nut on the inside formed another clamp * * * * which gave you the full power of the nut *to draw the plates together*."

And again (Answer 4, p. 119), he says of the Red Burglar Safe, when on exhibition: "I spent a great deal of time explaining the manner *of the head and the nut drawing the plates together*."

He did not know that a conical bolt can never be a draw-bolt. On the contrary, he considered that it could be. And so it was that when looking at his own, which was a draw-bolt, and Hall's, which was not, he instantly exclaimed, "*It ain't the same bolt.*"

Record, Answer 54, p. 128.

He was asked (Cross-examination 61, p. 129) if he had any rule or could tell where a countersunk ends, and a conical bolt begins.

He answered: "I don't know that I have any rule or know of any."

Cross-answer 65, p. 130:

"*Irrespective of the number of plates through which either may pass*, the difference is, the conical bolt has the angle of its *head* more acute, and the *head* may be a little larger."

And to add to the confusion of terms upon the subject, in Cross-answer 64, p. 130, he attempts to draw a distinction between "the *conical headed* bolt," which, of course, is but a countersunk bolt, and "a countersunk headed bolt," and affirms that the latter may go through as many plates as the former, "*and yet not change the name or character of either.*"

In order still further to see what fixed conception, if any, Mr. Butler had as to the shape of Hall's bolt, and its quality as a conical bolt, he was asked what the Hall bolt would be when stripped of its thread (Q. 141, pp. 145, 146).

He answered: "*I think it would be a sort of round wedge or plug.*"

This answer is quite remarkable as showing his idea that the frustum of a cone could not be a bolt at all, but was a round wedge or plug. Not because of any views he has as to what he calls a wedge or plug, but because of the decided views he has as to what is a bolt.

In Webster's Dictionary, a bolt is defined to be "a strong cylindrical pin."

Evidently, Butler took the same definition, and therefore, when looking at a conical bolt only as the frustum of a cone he saw nothing of "a cylindrical pin" attached to it, and was assured thereby that it was not a bolt in any sense, but only a wedge or plug.

With him that only was a bolt which had a cylinder to it, and if a conical head was attached to the cylinder, then it became a conical bolt. And none others were so.

This explains why he says (Ans. 49, p. 128), when speaking of his alleged "conical bolt": "We are not now, never was, very particular to have the *heads* of the bolts as long as the thickness of the plates."

And still further (at Ques. 149, p. 145), he explains it as a difference between his and Hall's bolt, that the latter "certainly would have very little effect *by drawing the plates together.*"

His whole practice and knowledge combined to fix it in his

mind that a conical bolt was not a bolt, but only a plug, unless it had a conical head with an indefinite length of stem?

Such was his belief. He acted on it himself; those about him, his partner and workmen, also believed it, and it was too late in the day to ask or expect him to stultify the opinions of a lifetime.

So then we may confidently assert that Butler did not regard any of his bolts as similar in "form" Ans. 56, p. 128), similar in "effect" (Ques. 46, p. 243), similar in application (Cross Ans., Q. 89, p. 700), similarly produced (Ans. 55, p. 128), similar "by any means," nor "represent anything of the kind" (Ans. 150, 151, pp. 145, 146), to those covered by the complainant's patent.

Uriah B. Cooper was next called.

When the firm of Holmes & Butler changed to that of Valentine & Butler, Mr. Cooper was employed as foreman, and worked with them as such from 1861 to 1864.

He was called to corroborate the use of the bolts.

His evidence is open to the gravest doubt and suspicion.

He put into the case two exhibits—an arbor shaft and a reamer, which were strongly relied upon as proving their anticipatory use for the four years of his term.

According to his story they came into his possession for production during his deposition in the most mysterious way. He did not know they were to come to him. He did not know until the evening previous that he was to be a witness. He had no conversation with any one concerning them. He had known of them for years, but had not seen them since he left the shop in 1864. He had told no one of them, not even Butler, his employer. He had talked to no one as to them. He was put upon the stand without any person knowing what his testimony would be, and without knowing himself what he was to be examined about.

These tools were handed him in the morning, by a porter at another store, without his previous knowledge or arrangement, and without any intimation from him or to him as to their existence.

P. 161.

Mr. Moore, respondent's counsel, had taken his testimony before in 1871, in the case then pending, when, of course, all

matters were fresher and more accessible than in 1877, and the case was at least as warmly contested.

Butler testified then, and he knew nothing and said nothing of these tools. Cooper testified then, and if he tells the truth now, knew of them but said nothing of them. The same counsel had conducted the case then, and knew nothing of them.

And yet, in spite of all this, Mr. Moore (not knowing of the tools) asked him to produce them, and never suspected their existence until the request was made.

Cross-answer, 69, pp. 161, 162.

The story itself, and the manner of telling it, suggests doubts as to the candor of the witness. And when the careful preparation of the case, both in 1871 and at present, is considered, and the fact that every available source of information was thoroughly explored, then and now, the fact that such testimony should have then been so unaccountably omitted, and now so unaccountably produced, with such reticence as to its existence on the part of the witness, and such intuition as to its presence on the part of counsel, is simply astounding.

But after the reamer is produced, the statements concerning it are even more astounding. The witness says he had it made for him in 1861, for the express purpose of reaming holes for conical bolts, and "I used this particular reamer for four years."

By looking at the reamer, it will be seen that it is rusty, its cutting edges are broken away—indisputably it has never been sharpened since it was made, and just as indisputably it is incapable of reaming any hole in its present condition.

"It has been in use more or less for fifteen years. This was constantly."

Cross-answer, 63, p. 161.

What says the other testimony as to the possibility of such a tool being used for such a purpose for such a time?

Mr. Monig says:

"The way we use a reamer for reaming out iron and steel, we can't use it no longer than about a day and a half, and it is wore out."

Monig, Record, Answer 38, p. 506.

"It is not possible to use a reamer six or seven years."
Monig, Record, Answer 39, p. 506.

"A reamer used to ream out holes with, I wouldn't depend on more than two days."
Schultze, Record, Q. 32, p. 514.

"It (the Cooper reamer) looks as if it was old enough, but I don't think it has been in constant use for anything like that time—not reaming iron plates. Our reamers don't usually average more than two or three months, and they have to be sharpened every week or ten days, or two weeks at the longest. They would be completely worn out in two or three months, so that they would be too small. The greatest depth of hole that could be reamed with that reamer is $2\frac{7}{8}$ inches."
Corry, Record, Q. 65, p. 563.

Therefore, before we even begin an analysis of Mr. Cooper's evidence, we find from these statements that the exhibit on which he rests his assertions wholly fails him.

Because, *first.*—If it was used for even a fortnight without sharpening, it would be useless.

Second.—If used and sharpened, it would become too small, in two or three months, and would be useless.

Third.—But when used and sharpened, and before it lost its dimensions, it is only capable of reaming a hole two and seven-eighths inches in depth, and therefore was incapable of reaming a conical hole in the larger safes testified to by Mr. Butler.

And, *fourth.*—Butler drew sketches (*ante*, p. 55), which show the dies in which all their conical bolts were swedged, and demonstrate that the only reamer which could have been used was one to fit these bolts into their places.

But passing all this for the present, let us see what Mr. Cooper means when *he* talks of conical bolts.

It will scarcely be claimed that he knew more than his master, nor will it be claimed that he and Butler are talking of different things. On the contrary, they are talking of the same things. Cooper was the foreman of Butler, and making for Butler those bolts, which Butler has already testified to, and which are relied upon as anticipations.

We have seen that when Butler spoke of conical bolts he meant countersunk bolts, which were draw-bolts. We shall find that Cooper means the same. In fact he says (Cross-answer 36, p. 157), "All these improvements as regards strength, etc., was left to Mr. Butler," and consequently that which Butler ordered to be made was what was made, and referred to by Mr. Cooper.

The Hall conical bolt, being conical throughout, was a bolt that Butler never approved, and he gave his reasons for it.

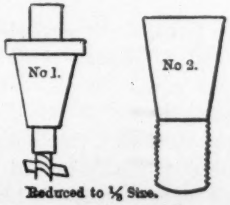
When Cooper attempted to repeat these reasons, he gave a ludicrous version of them.

He said (Cross-answer 47, p. 159), they were disapproved "for the purpose of making the outer surface perfectly smooth, so as not to show any indications of the conical bolts, believing it is a better security as regards the operations of burglars."

As if the outer surface of the head of one bolt was different from another, or as if either afforded any indication to the burglar, or as if the outer surface was not entirely smooth whichever was used.

This is but a specimen of his want of candor or knowledge, or both. But to come to his testimony.

Testifying in chief, he was like the rest. He was positive as to the use of the conical bolts. But, on cross-examination, like all the rest, he showed a countersunk bolt. He was asked to make sketches of the conical bolts which he had so frequently used. They appear on page 151:



Reduced to ½ Size.
"Cooper Sketches."
Record, page 290.

One is a lock-arbor shaft, the other, apparently, disconnected from its plates, is a conical bolt.

That it might be tested, in reference to its plates, he was asked through how many of the plates the conical head would pass, and how long would be the cylinder in a three-inch wall.

Cross-question 33, p. 156.

His answer was explicit:

"That would depend on the size of the cylinder. If it were a seven-eighth cylinder, and required a seven-eighth nut, the cylinder portion would be one inch, and the conical portion one inch and seven-eighths."

This makes a bolt, with a conical head of two and seven-eighths inches, and with a plain cylinder one inch, leaving one-eighth inside for the nut to draw the bolt with.

Thus, in the very teeth of his own sketch, demonstrating once more the use of the countersunk bolt.

The conical shape of the bolt in his sketch was suggested undoubtedly by seeing the exhibits of pure conical bolts lying on the table before him.

In the next question he was asked if he had any rule by which he could determine a conical bolt.

"We never had any such rule."

Cross-answer 34, p. 157.

It being thus settled that he did not know the rule, we sought to know what were the functions of the bolt he used, and found it was a countersunk *draw*-bolt.

"I don't know as there is any particular standard, for it only having sufficient room between the nut and the bottom of the thread to *draw all parts together*."

Cross-answer 101, p. 164.

It is unnecessary to particularize between the bolts he calls Butler's and the Farrell & Weimar bolt. One of the latter, taken from the Stephen's safe, is in evidence, and shows for itself that it is countersunk.

He refers to no safes in which he claims the bolts were put, except those subsequent to Hall's patent. He says he could not do so, without reference to Butler's books, and if these had

contained any entries which would have supported the claim, it is fair to presume that Mr. Butler would have exhibited them.

The Auberlin Screw.

The next in point of time is the rejected application of Theophilus Auberlin, filed February 26, 1861.

The application of Auberlin does not in anywise describe such a method or combination as is patented to Hall.

See Specifications, p. 874.

The exhibit shows a small cone-shaped screw of soft iron which was used from 1861 to 1866 by Mr. Auberlin, with which to attach the backs of fire-proof safes to the angle irons at the corners of such safes. It was not designed for use in a burglar-proof safe, and never was used in such a safe.

It is not drill-proof, and therefore never was designed "to very much protract the labors of the burglar," as Hall states his bolt to be. Nor to "present serious obstacles to the removal at the successive plates." Nor "to be keyed upon the inside, or secured in place by any other substantial manner." Nor "to be made of the hardest steel." Nor for "more effectually binding in one compact mass the series of alternate iron and steel plates."

It does not even pretend to be a bolt, nor was it ever so called, until invested with that title in this case. It is nothing but a small wire screw made by filing down the end of a common wrought iron rod, one-quarter to three-eighths of an inch thick, with a thread cut on it by forcing it into an ordinary die. The wire was bent at right angles to make a handle by which it was screwed into place, after which the end was cut off by a chisel.

Auberlin, Record, 240, 241.
Millward, Record, 607, 608.

It was not intended to be used in combination with the plates of a burglar-proof safe. It was only used in fire-proof safes.

Auberlin, Record, 238–240.

A fire-proof safe is a structure differing organically from a burglar-proof safe. The only security it affords is that which its name implies, viz., security against fire.

Its non-combustible materials, asbestos, plaster, and the like, which make bulk without strength, forbid the idea of its being burglar-proof.

Hence, when we speak of burglar-proof devices, we mean, *ex necessitate*, to exclude the fire-proof safe. For obviously it would be useless to put upon a fire-proof safe the heaviest of burglar-proof doors, to prevent an unauthorized entrance, when the walls of the safe cannot resist attack.

To refer therefore to a burglar-proof bolt, or to any repelling material, is at once in the trade, to refer wholly to a burglar-proof, and to ignore a fire-proof safe. True, to meet commercial wants, there is made a compound safe, which is in a degree both fire and burglar-proof. But the distinctive differences are still observed in these. The fire-proof part is one structure—the burglar proof another. They are not blended, and can not be, and so far as this inquiry is concerned, they are as distinct as though they were never made within the same walls.

The Auberlin screw had no inferior fastening whatever. It could be easily removed and unscrewed by a chisel or a screw driver, and being nothing but soft iron could be drilled without difficulty.

Auberlin, Record, 240, 241.
Corry, Record, 564. 565.
Millward, Record, 607. 608, 625.

In the language of Mr. Millward, 608 :

" The Auberlin device is as remote from the Hall conical bolt in principle as can well be imagined. It is not a bolt for holding a series of plates of a burglar-proof safe in proper relation, so that the bolt cannot be removed, or the plates stripped off, and is not intended or adapted for any such use. It is simply a small wire screw for attaching the back plates of a fire-proof safe to its angle iron corners."

As the rejected application of itself is not sufficient to defeat Hall, the use of some three hundred fire-proof safes containing these screws is proven. The testimony as to these shows not a public but a secret use, carefully concealed from the public—

which no ordinary observation could have discovered, and with a knowledge of which Hall is not charged. Its existence seems to have been known to but three persons, and to have been kept by them as a trade secret.

Mr. Auberlin, indeed, asserted that "the purpose of these screws was to make them secure against the punch or screw driver."

But inasmuch as they could be instantly unscrewed by a chisel or a punch, without any force being exerted, the absurdity of the proposition is manifest.

Mr. Knight, respondent's expert, could not be brought to declare this invention to be an anticipation of Hall, but on the contrary, he speaks thus guardedly concerning it, and attaches conditions to all he says.

He says (p. 256): "It would appear to come within the range of devices, specified and claimed in Hall's conical bolt patent, *providing it were made drill-proof and substantially fastened at its inner end;*" and again (p. 301), "it would appear that the inventor, Auberlin, *did not intend to rivet* his screw-threaded bolt;" and again (*id.*), "it cannot be said that he describes in set terms a bolt which is both screw-threaded and riveted;" and again (p. 308), "I will explain, however, that in giving my answers, *I presumed the bolt to be imbedded in a series of plates composing a portion of a safe wall.*"

That is, by attributing to the exhibit, which is itself inaccurate, properties which the Auberlin screw does not, and from its very nature cannot have, it can be made to *appear to come within the range* of the devices specified in Hall's conical bolt patent. Or, in other words, it comes within the range of these devices, except that it lacks every essential element of them.

The Love Bolt.

This brings us to consider the Love Bolt.

All that has been urged against the Auberlin screw for want of identity of function and intended use, can be urged with more than equal force against this.

The bolt is described in a patent to John P. Love, dated October 22, 1861, which has been offered in evidence (Record,

p. 936). But there is no proof whatever of its ever having been used, so that even if it could be regarded as a device covering Hall's patent, it does not in anywise invalidate it, inasmuch as the proof is clear that Hall *invented* the plain conical bolt in 1858 or 1859, more than two years prior to the date of the Love patent.

But this cannot be regarded as a device identical with and therefore anticipating Hall's patent.

The bolt is conical in its form, and there all resemblance ceases.

The patent sets out that the invention is an improved means of attaching armor to navigable vessels.

It therefore is not a new method of protecting burglar-proof safes, nor is the bolt to be used in combination for any such purpose.

Millward makes a thorough showing of the differences between it and the Hall bolt (pp. 613 to 616, inclusive).

"It is something like the Hall conical bolt in configuration * * * * * * * but the operation of the 'Love Bolt,' and the result accomplished by its use, differ materially from the operation and functional use of the 'Hall Conical Bolt,' on the plate-walls of a burglar-proof safe.

* * * * * *

The armor is a single thickness, but it is put in in sections, like flag-stones on a sidewalk, and the sections are rabbeted on the edges so as to make an overlapped joint where they meet.

"The tapering bolt is used to pass through this lapped joint, * * * but before the bolts are inserted for permanent use a packing of compressible material, about the eighth of an inch thick, is placed between the edges of the sections of armor, and the drawing of the bolt in by the nuts * * * serves to draw one section against another, edge to edge, so as to compress this packing."

* * * * * * *

"The Hall bolt does not act, nor can it be used to draw sections of plates together laterally, and this is not its intended function. It is used to pass through a series of metal plates, sufficient in number to form a secure wall of a burglar-proof

safe, and to hold said series of plates in proper relation to each other." * * * * *

"The Love bolt does not hold a series of plates immovably together. It is essentially a draw-bolt, and it is called 'the conical draw-bolt D' in the patent.

"The armor through which the 'Love bolt' passes is not described as anything more than soft metal, and the bolt itself is not described as being drill-proof, and there is no object in making it so, of course, as the vessel is not a secure receptacle, accessible only by cutting through the walls.

"There would be no difficulty in withdrawing the 'Love bolt' from the armor, and there is no attempt made, apparently, in the 'Love patent' to prevent such withdrawal.

"The inside nut is for drawing purposes; that is, it serves to draw the sections of the armor together, edge to edge."

It was supposed, and urged, that this statement by Millward that the Love bolt was a conical draw-bolt, involved flat contradiction, because he and others had said that a conical bolt could never act as a draw-bolt.

The distinction, however, is palpable. A conical bolt can never act as a draw-bolt in the sense of drawing together and compressing plates through which it passes and in which it is seated, by an accurate fit. The introduction of a packing material between the plates—keeping them out of their proper relation to each other—would, of course, prevent the bolt from becoming seated, without drawing the plates to their proper relation. But a conical bolt inserted in openings which are but partially in line, will act laterally to draw them into alignment. When the alignment is made, however, they cease to be draw-bolts, and the bolt fits accurately in its holes.

In this connection, because they are all of a class, Respondents' Exhibits "Iron Armor" and "Wagon Shackle Patent" may be summarily disposed of by the very explicit statements of Mr. Millward as to them.

Millward, Record, 616.

"I have read and understand the descriptions and drawings marked 'Exhibit Iron Armor.'

"It shows and describes several methods of making ship armor and shot targets, most of the figures showing wooden hulls with exterior armor, and the others showing different constructions of targets.

"In none of the figures is there shown a bolt having continuous taper through a series of plates composing a wall. All the bolts shown in this exhibit are the ordinary countersunk headed bolts.

"Some of the figures show rivets having countersunk heads, cylindrical shanks, the ends of which are riveted over in semi-sperical forms, and two of the figures show wood screws with countersunk heads and cylindrical shanks.

"The only other figure is one marked Fig. 7, and that shows a series of plates held together by cylindrical screws.

"In addition to the connecting rivets of the Figs. 10, 11 and 12, these figures show methods of riveting a bar around a section of armor plates, so as to make what is called a continuous rivet.

"There is nothing in this exhibit which at all approaches the construction, operation or functional use of the 'Hall conical bolt,' in the walls of a burglar-proof safe" (see also illustrations, p. 953).

"I have examined and understand the Respondents' Exhibit 'Wagon Shackle Patent.'

"This device is simply an improvement in the formation of the hinge joint between the tongue frame of a wagon and its axle; and, in place of an ordinary straight pin or bolt for this joint, this inventor uses a taper screw-bolt. One part of the hinge is a jaw secured to the axle, and the other part is a strap from the shaft fitting between the two parts of the jaw.

"The two parts of the jaw through which the bolt passes are not held in proper relation by the taper screw, as they are in one solid piece, with no capacity for separation, and the bolt does not retain the other part of the hinge in any specified relation, as it is allowed to swing; and, of course, in swinging, moves to and fro on the screw."

"This device is nothing more than the substitution of a taper hinge-pin for a straight or cylindrical hinge-pin, and it is not designed to perform the operation, and is not intended for the use peculiar to the Hall conical bolt."

The Farrell & Weimar Rejected Application.

The next anticipatory use attempted to be established was that of the Farrell & Weimar bolt.

The history of this bolt is found in the testimony of Jacob Weimar, Seth H. Noyes and John Farrell, at pages 99, 114 and 166, respectively.

In 1864, John Farrell was a member of the firm of Silas C. Herring & Co., safe makers, in New York.

Jacob Weimar had been a workman in their factory, and was made foreman. Noyes was then one of their salesmen.

Early in 1864, P. H. Stephens, a banker in the City of New York, owned a safe built for him by Herring & Co., and supposed to be burglar proof.

The lock became out of order, so that the safe could not be opened. Mr. Hendrickson, of Brooklyn, a safe maker and expert, was employed by Stephens to open it. Hendrickson did this by stripping the plates. Upon seeing which Stephens sent for Farrell to tell him of the result, and to complain that the safe was not burglar proof.

Farrell then undertook to furnish him another which should be burglar proof. In pursuance of which, Farrell furnished him a small box or banker's chest, small enough to be placed inside of the walls of the original safe.

This inside safe is known throughout the record as the Stephens safe, and is numbered 5,727. It was delivered to him May 30, 1864.

In the same month, May, 1864, Herring & Co. made another safe, sold to the Second National Bank of Wilkesbarre, Pa., containing the same kind of bolts as the Stephens safe. From that time they continued the same style of bolt, and sold many safes containing them. This style of bolt was also used by Uriah B. Cooper at Valentine & Butler's, as heretofore stated by him.

And, as stated by him positively, and all the above named witnesses as positively, it was a drill-proof conical bolt, conical to all the plates of a burglar proof safe through which it passed, and was intended to secure, and was used in combination with such plates in such safes.

So far, then, as mere names and assertions go, it was a complete anticipation of the Hall invention.

The fact, however, as we will presently show, turned out to be that the bolt was a countersunk bolt. Palpably and unmistakably it was a countersunk bolt. It had a conical head and a cylinder. The conical head did not pass entirely through all the plates, but only midway of them. The cylinder joined the head at that point, and the angle of their junction occurred within the walls.

But before we attempt to show that fact, we desire to impress upon the court the character of the difficulties which have beset this appellant throughout all his endeavors to maintain the priority of his invention.

In this instance, and in every other on the record, we find that we are dealing with a name only, and with witnesses, some of whom have never known the significance of the name to which they testify. If, then, we have not before us the invention itself, or if we cannot get from them such accurate descriptions as will enable us to exemplify the thing itself, regardless of names, we are comparatively at their mercy.

The testimony of Farrell, Weimar and Noyes show how completely the rights of the appellants have been jeopardized by mere assertion.

John Farrell is a man of standing, and presumably of integrity, asserting from the first the unequivocal use of a conical bolt, which went entirely through all the plates of a safe, and maintaining his assertion inflexibly throughout, corroborated by his foreman, Weimer, and also by his salesman, Noyes, and each averring, with the utmost positiveness to a state of fact which, if true, might have been fatal to this suit. It was not true. It was not anything like true. It was not anything but the same old contrivance of a countersunk bolt.

And yet, in the absence of the safe as an exhibit, no testimony could, on its face, be more convincing, more plausible, and more candid.

Most fortunately for us, we procured the safe, and by the production of the bolt, are able to overthrow that which, otherwise, would have been claimed to be invincible.

See how smoothly this runs. It is Farrell's history of the first invention of the conical bolt, after the demolition of the Stephens safe :

"I told him (Weimar) * * * * to make a number of of conical bolts to go through the series of plates * * * *

as far as the Franklinite. * * * * He then suggested that these cone bolts should be continued, with their conical shape, through the entire thickness of all the plates to the inside of the door, and be fastened by a heavy screw nut, etc."

Answer 3, p.

And this was accordingly done; and from that time on the use of such a bolt was maintained.

Farrell cannot be mistaken, Weimar cannot be mistaken, nor Noyes mistaken.

The use, however, was a varied one. If the safe had a Franklinite plate, it was not deemed essential that the bolt should be conical throughout all that metal. If it had a plate of Franklinite not greater than an inch and a half in thickness, and alternate plates of iron and steel, it usually passed entirely through. But where the door was not more than an inch and a half to an inch and three-quarters thick, it uniformly passed entirely through.

Weimar, Record, 87, p. 111.

And yet, despite the smoothness of the story, and the certainty of the detail, it did no such thing.

We seek, therefore, to impress upon the court that no assumption on the part of any witness, however respectable, and no declaration as to a prior use, however emphatic, can be relied on in this case, unless supported by the bolt itself, seated in and surrounded by the plates it is intended to secure.

In January, 1868, six months after Hall obtained his patent, John Farrell and Jacob Weimar applied for a patent also. By that time they must have seen Hall's drawings, showing the conical bolt, and read his specifications concerning it. Their drawing accordingly, *e e*, Fig. 2 (Record, 908), shows forms of conical bolts: *e*, in Fig. 3, shows the bolt in combination with the plates of the safe, and the specification (Record, 904) describes the invention. "Said invention consists in binding together the series of plates by means of conical bolts made drill proof, and extending through the series of plates." *Prima facie*, therefore, there can be no mistake as to the identity of the devices, and, according to their testimony in the interference, Farrell and Weimar must have been, as early as 1864, familiar with the form and function of a conical bolt in a safe as contradistinguished from a countersunk bolt.

But yet, when Farrell was cross-examined in 1876, he knew nothing of the differences.

He was given the case of a safe with nine half-inch plates in the walls, making a total thickness of four and a half inches, with a countersunk bolt, whose conical head passed through four plates, making two inches, and having a cylinder passing through the other two and a half inches.

He said: That is a cone bolt.

If it only passed through three plates?

It is a cone bolt.

If it passed through two plates?

A cone-shaped bolt.

And if through one?

It is a rivet (Cross-answers 75, 76 and 77, pp. 178, 179).

So he knew nothing of the form. He was then asked as to the function, and he assigned it to the attribute of being a draw-bolt.

"The object is to allow room for the nut to *draw up* close against the last plate, so as to bind them altogether."

Farrell, Record, 8, p. 168.

Millward says: "He, it is evident, intended to retain in it all the functions of a draw-bolt, and does not appear to have conceived at all the idea of abandoning the draw-bolt principle, incident to the use of a bolt, and with a head and shank."

Surely, it seems plain that one who had this conception of a bolt, never, at first, and does not now, comprehend the device the complainant claims.

He is contradicted in several other respects.

He says (p. 167) that, after the invention of the Stephens safe, he "instructed Mr. Stephens to challenge said Hendrickson to open said safe, which, to his knowledge, said Hendrickson declined to do." Hendrickson denies this flatly (Answer 23, p. 390), and so does Stephens (Answer 14, p. 425).

He gave, with the utmost particularity, the dimensions of the Stephens safe, in all parts and plates (p. 175). When the safe was dissected he was all wrong.

Hendrickson, Record, 391.

He said he attached but little importance to the conical bolt in selling safes. From 1854 to 1858 there were several more important features urged in the sale of safes.

Cross-answers 23 and 25, p. 172.

Noyes puts it otherwise (115).

He says (that) (it is wholly impracticable to seat a screw-threaded conical bolt of welded iron and steel accurately in plates of welded iron and steel threaded to receive them. And (that hearing Hall boasted of doing such work) he examined about twenty-five holes in the plates of the vaults for the Central Safety Deposit Company in New York, which was said to contain it, and saw that the holes were not tapped (172, 173). But Hall's workmen contradict him unmistakably.

"I know the plates were tapped."

Klare, Record, Answer 7, p. 494.

"Any experienced safemaker could see that they were tapped."

Corry, Record, Ans. 41, 42, p. 558.

"About five hundred conical bolts were put in." "All the iron plates were tapped."

Monig, Record, Ans. 26, 27, p. 505.

Hall made a similar job for the Baltimore Safety Deposit Company, in which about four thousand were put in (Ans. 14, 504). Monig, a workman, put in about six hundred of them himself (Monig, Ans. 15, 504), and the Complainant's Exhibit "Monig Model Baltimore Job," shows a section of that vault in which such bolt appears.

As has been stated, they, Weimar and Noyes, estified that the bolts in the Stephens safe were pure conical bolts, and all the bolts used by them thereafter were pure conical bolts, like the Stephens bolt.

Farrell, Record, Cross-answers 40, 41, 42, p. 174.

But unfortunately for all this story, on September 12, 1876, the Stephens safe was purchased by Hall's Safe and Lock Company, dissected by the same Hendrickson, who had taken it apart, and the bolts and parts put in evidence by the complainant (p. 390).

The identity of the safe is not disputed. Hendrickson put a private mark on it in 1864, and found it there in 1876.

The court will see at a glance that the bolts are not conical bolts; they bear no evidence whatever to the description given of them in the testimony, and assuredly are not the bolts shown in the drawings of the Farrell & Weimar application.

Jacob Weimar testified also. At first he corroborated Farrell in every particular about the bolt.

He put in one of the alleged bolts as an exhibit marked with his name. We had not then procured the Stephens safe, and we desired to show that all of the so called conical bolts used in the Stephens safe, and thereafter, were like the exhibit, for if they were, they were countersunk bolts beyond any question, and all of his assertions were nullified.

So, this, at page 109.

Cross-question 72. Is this exhibit exactly like the bolts used in any other of the fifty safes before mentioned?

Answer. Yes.

Cross-question 73. Which of the safes contain bolts like this exhibit?

Answer. "Any (all) of the safes built after Stevens safe."

Cross-question 74. Without regard to the size or thickness of them?

Answer. Yes, without regard to them.

It was material also to fix the age and identity of the exhibit. Remembering the drawings of their specification, it was highly material, and therefore he was asked:

Cross-question 6, 99:

"When was this particular bolt, which is now offered in evidence, made, if you know?"

"This bolt was made in 1864."

Although he made that answer, he knew nothing at all about the bolt. This is clear from the cross-examination (p. 103, 104). In re-examination it was attempted to rescue him from his contradictions.

Redirect-question 84. "Do you know when the particular bolt of the exhibit was made?"

Answer. "I do not" (p. 111).

And so ends the authenticity of this exhibit, like those of Uriah B. Cooper.

Before dismissing this defense, it is proper to refer to the interference growing out of the aforesaid application.

Farrell & Weimar Interference.

In 1868 Farrell & Weimar filed an application for a patent for a conical bolt proper, and also for a countersunk bolt merely. Both these are distinctly shown at *e*, *e*, of drawing, Fig. 3; and are described in the specification attached to the application, thus: "The *conical portion* of the bolts *may be nearly* as long as the thickness of the compound plate, *but we prefer to have them conical the whole way as represented*" (Record, 904).

The application was rejected because anticipated by Hall (Record, 906).

An interference with Hall was asked (Record, 906) and refused. "For a conical bolt to secure the different plates of a safe or vault together, the applicant is referred to patent Ira L. Cady, April 29, 1851" (Record, 906).

Counsel for Farrell & Weimar explained the claim to be for the method of "connecting and binding together the series of plates by means of conical screw bolts made *drill-proof*." * * * * * "The bolts in the Cady patent are not described as being drill proof" (Record, 907).

The Office recognized the difference, and declared an interference with Hall. In that interference Hall rested on his patent of 1867. To ovecome that in priority, Farrell & Weimar proved their use of alleged conical bolts in 1864. Hall rebutted that priority by proving his invention of the conical bolt in 1859, with his experimental use —*not* public use—under the invention, culminating in the patent in 1867, with no other patent intervening to cut him out of the experimental use.

Of course, incidentally, the patent to Hall of 1860, for his lock arbor, was brought in, and in discussing it Hall, as has been seen, called it a conical bolt.

The Commissioner decided the interference for Hall, and Farrell & Weimar retired to wreek their disappointment upon him by using his bolt, and by testifying against him in this case. And now, after all this lapse of time, and after all the bluster and assertion, Hall has been fortunate enough to procure the Stephens safe, by which it appears that Farrell & Weimar were attempting a fraud in the Patent Office when they declared their bolt of 1864 to be the same bolt shown in their drawings.

Because Hall had called his 1860 lock arbor a conical bolt in the interference, the fact was seized upon to put an inaccurate model of the arbor into the present case, and it was christened "Respondent's Exhibit Hall Conical Bolt" (p. 202), and George Berkmeyer was put forward to usher it in. But he said at once, "I don't call that a conical bolt; *that is a lock arbor*" (Reference, Ans. 65, 202).

Of course the answer was unexpected, and thereupon question 66 was put to him insinuatingly:

"Was this *bolt*" (not conical bolt—simply plain *bolt*), "was this *bolt* tapped."

Nevertheless, and notwithstanding all which, the witness replied:

"The *arbor* was tapped."

There was but one way left, and that was to suggest to him, by the *injecting* process, that there was no difference between them.

So, that way was accordingly tried, but still, the witness blurted out that there was a difference, and, more than that, he described what the difference was:

"The difference is this: an arbor is put in a door for working the lock, and the inside of the arbor revolves in the outside part, while a conical bolt is put in a safe for the purpose to not strip off the plates."

Berkmeyer, Record, 67, p. 203.

No further efforts were wasted on the witness in that direction.

Terwilliger & Co.

We could have objected to the testimony of Joseph Kohout and J. M. Mossman, who were called to prove an anticipatory use by Terwilliger & Co., and others, because no notice was given in the answer as to them. The Terwilligers were named but not called. But we did not object, as we desired to show once more how extensively the misnomer, "conical bolt," has obtained in the trade, and how completely a court might be deceived by relying upon it.

We have repeatedly pointed out that when witnesses were asserting, even honestly, the use of conical bolts, it did not at

all follow that they meant any such bolt as Hall's, but, on the contrary, that it was uniformly certain they referred to countersunk bolts.

The Terwilliger instance is but another example of the fact.

Ira L. Cady testifies that Cady & Hawkes first gave an order to this firm to make for them a safe containing so-called conical bolts. He thinks it was in 1865, but the order-book of Terwilliger and Co., produced by Mossman, shows the earliest order from Cady & Hawkes to be dated May 24, 1866, less than a year before Hall's application for his patent.

Question 9, p. 332.

Mr. Mossman was the superintendent of Terwilliger's in 1866, and was the partner of Ira L. Cady when he gave his deposition in 1877.

Joseph Kohout was a workman at Terwilliger's in 1866 and afterward, and he and Mossman came forward to testify to the use of conical bolts in 1866.

Of Kohout, it is sufficient to say that he was an ignorant German, understanding but few words of English, and those of the simplest sort. Although it conclusively appeared that before his examination Mossman had injected into him the year 1866 as the date of the earliest use, yet, notwithstanding, he could not be made to retain the date, and repeatedly averred it to be the winter of 1867, after complainant's patent.

Of Mr. Mossman much more can be said. He busied himself to procure Terwilliger's order-book, and, as we claim, mutilated it.

When we demanded that it should be attached for the inspection of the court, he refused to attach it and evaded us by a quibble. He volunteered, avowedly at his own expense, to go into another State and examine a safe containing one of these conical bolts. After such examination, he misstated its result. He did not attempt to conceal his interest or his hostility.

From the order book referred to he read the details of an order of May 24, 1866, by Cady & Hawkes. This was the earliest use to which he could refer. That date is not two years before Hall's patent, and therefore does not affect him. This order, after describing the minutiæ of a safe, called for "at

least six conical steel, or iron and steel, bolts, running through from the front and through the bolt frame " (p. 332).

And several other orders, later in time, were also read, each of which either called expressly for such conical bolts, or else Mr. Mossman swore that they were contained in them.

Prima facie, it would seem that here there could be no mistake as to the use of a conical bolt. Here was the order, undoubtedly genuine, and here were the identical bolts described.

Moreover, to make assurance doubly sure, Mr. Mossman gave his definition of a conical bolt (Answer 61, p. 340) with sufficient accuracy to carry with it a belief beyond doubt that he knew whereof he spoke.

When the witness first went into the employment of Terwilliger, January 1, 1866 (330), there were then nearly finished two safes having these bolts placed in them (333), one of which went afterward to the National Bank of Hoboken (Answer 85, p. 342).

So that the Hoboken was one of the first uses. It had the conical bolt. In order that there might be no cavil about it, Mossman had gone to Hoboken the previous day, obtained permission to and did remove the bolt, showed it to the officers of the bank, explained to them that it was a conical bolt, returned and testified triumphantly that it was a conical bolt, pure and simple.

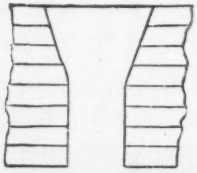
He made no drawing of it. It was unnecessary. He only wished to refresh his memory.

Another safe which contained these conical bolts, as he said, was that in the Cumberland Bank, at Bridgeton, N. J., ordered October 16, 1866.

He was as firm in that in chief as aught on earth.

He was required, in cross-examination to draw a sketch of the bolt in that bank.

No. 1.



"Mossman Sketch, No. 1."
Record, page 335.

The witness drew the above sketch, "Mossman Sketch No. 1," and said:

"That is as near as my recollection serves me of the safe at Bridgeton. A nut belongs there, but to represent it properly it would have to be carried through the frame."

A glance is sufficient to show that the bolt is not a conical, but a countersunk bolt, and that his declarations as to conical bolts were all unfounded.

He was asked on cross-examination (108, p. 345) if he knew the use of bolts which were like Hall's, viz.: "conical bolts, threaded or unthreaded, the cone part of which, without any break or angle in the line of its taper, continues throughout its whole length from its head to the nut?"

That was a different thing. There was no mistaking that, and he was compelled to admit that he had no recollection of using such a bolt until August 15, 1867, one month after the complainant's patent.

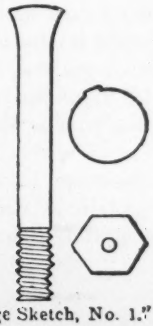
But the complainant had not been satisfied with Mossman's memory of the bolt he had seen in the Hoboken Bank.

Complainant, therefore, sent a witness to the bank, who was permitted to withdraw the same bolt which Mossman had withdrawn. The witness laid it down, and with his pencil copied its outlines on paper.

Coolidge, Record, 454.

Here it is, and the court will see by inspection how near the fact Mr. Mossman was.

No. 1.



"Coolidge Sketch, No. 1."
Record, page 454.

And so it appeared at last by the test of sketches and dimensions that Mr. Mossman was but telling the same old story over again in calling one bolt by the name of another.

There was one thing, however, in his testimony, which came out on the side of truth. Not that it came from him, but through him by reason of his producing Terwilliger's book, and that was this: out of the long list of safes which Cady testified Terwilliger made for him with conical bolts, the book showed Terwilliger made only three, and the bolts in these were countersunk bolts of the most orthodox style and pattern.

We have now gone through all the uses alleged against Hall. We will not weary the court by considering such devices as boiler screws, locomotive stay-bolts, wood screws, wagon-tire rivets, etc., as they, none of them, have the slightest resemblance to complainant's combination.

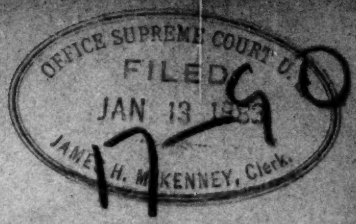
The court erred in admitting this patent of McNeale & Dodds.

This was a patent issued to McNeale & Dodds for a lock arbor. It was set up in the answer, but not offered in evidence during the taking of the testimony, nor was any proof taken as to it. It was offered in evidence and admitted at the trial, to which exception was duly taken.

All the witnesses of the respondents are interested against him in some form of interest or another. Butler, Cady, Cooper, Farrell, Miller, Mossman and Weimar, all are or have been infringers and competitors. Berkmeyer, Black, Helmer and Talbot are discharged and dissatisfied employees of Hall; while Kohout, Noyes and Taylor are employees in adverse interests. Knight is the expert of the respondents, and Auberlin, the last of the list, has a grievance of his own, for he imagines himself to be the inventor of Hall's combination, and entitled to the profits which he supposes Hall has made.

In closing our argument we have only to add that throughout the case the complainant constantly found that he was, with all the witnesses, fighting "the shadow of a name."

E. N. Dickerson,
Thos. A. Logan,
Counsel for Appellant.



Robert Clarke & Co., Printers, Cincinnati, O. [*December, 1882.*

United States Supreme Court.

JOSEPH L. HALL,
vs. 163.
NEAL MACNEALE ET AL.

JOSEPH L. HALL
vs. 165.
MOSLER, BAHMANN & CO.

JAMES MOORE,
Counsel for Appellees.

INDEX.

	PAGE.
General Statement and order of Brief	
Conical Bolt Patent	
Construction of " " "	2–9
Interference upon " " "	9–22
" Explanation, History, and Effect of	9–11
" Issue in same as here, and secret or experimental use	12–21
" Estops Complainant	21–22
Exhibit "Hall Conical Bolt"	
" " prior public use of invalidates " " "	22–36
" " is identical in principle with " " "	22–23
" " 1st of the hole in it	23–24
" " 2d Long and Short Conical Bolts	
" " degree and exhibits "degree Bolts"	24–29
" " 3d Secured in place same as	29–36
threaded and plain bolts	29–36
"dowel pin" argument	36
Farrel & Weimar prior use anticipates " " "	36–39
Cady's " " " " " "	39–41
herein of difference of material	39–41
Butler's Conical Bolts Anticipates " " "	42–47
" " Lock Arbors " " " "	46
Love Patent " " " "	48–51
Auberlin Prior Use " " " "	51–56
" used in Burglar Proof Safes	52–53
" bolts—as to securing them in place	54–55
Rejected Applications for Patents	56
Other Exhibits—"Iron Armor." Wagon Shackle Patent	57–59
Dodds & Macneale Patent Anticipates "Conical Bolt Patent"	59–60
RESUMÉ	60

INDEX

Robert Clarke & Co., Printers, Cincinnati, O. [*December, 1882.*

United States Supreme Court.

JOSEPH L. HALL,
vs.
NEAL MACNEALE ET AL. } 163.

JOSEPH L. HALL
vs.
MOSLER, BAHMANN & CO. } 165.

The defense to these suits is that the patent upon which they are based is void. This brief is intended to be a digest of the different matters relied upon by appellees to sustain their defense, and each is fully and separately presented, and an index attached.

The size of this volume is explained by my anxiety to save labor for your Honors, and this, it is believed, has been accomplished by stating each defense as fully as if it were the only defense made, thus enabling your Honors by referring to the index to limit your examination, should you so desire. To this statement that each defense is fully stated under its appropriate heading, an important exception is to be noted: Appellant objects to many of the exhibits offered by appellees as anticipations of the invention in issue, that they are short and not long conical bolts, or, according to appellant's terminology, that they are "countersunk," and not "conical bolts." This objection will be discussed once for

all while the prior use of appellee, Hall, shown in his 1860 patent, is under discussion.

The proof of infringement in No. 163 is to be found in the second par. of page 11, record. If there be any proof of infringement by Mosler, Bahmann & Co., I know not where it is.

CONSTRUCTION OF THE PATENT.
(Page 865 et seq.)

Its third claim is as follows:

"3. The conical or tapering arbors 1, in combination with two or more plates of metal in the doors and casings of safes and other secure receptacles, the arbors being secured in place in the plates by Keys 2, or in other substantial manner."

The first question in order is, what is the correct meaning of this claim? Upon its language no other opinion can be predicated than that it is for any device that is expressed by the language "conical or tapering arbor," secured in a "substantial manner" in the wall or casing of any secure receptacle. But, as any reading of the claim which does not take into consideration other portions of the accompanying specification referring to this device may not be sound, I will quote all such parts of it as refer to this device:

"The nature of this invention consists" * * * "and further, securing a series of plates forming a casing or door of the safe by means of conical or tapering arbors, which, being tapped in from the outside of the door or casing, and keyed upon the inside, *presents serious obstacles to the removal of successive plates forming the body of the safes.*" * *

"In order to still further secure together the plates forming the door of the safe, I use a conical arbor, 1, or a number, if necessary; they are introduced in openings through the series of plates, being tapped into the two innermost or all of the plates, and keyed in position. A smooth surface in the plane of the outer face of the door is presented, giving no means of removing the arbors 1, even should the key 2 be removed." * * * "Since the

doors of safes are more exposed than any other part of them, it is necessary to embody in their construction such devices which in themselves are the simplest as shall effectually bar forcible entrance to the safes. The introduction of arbors for the purpose of *more effectually binding in one compact mass* the series of alternate iron and steel plates in the doors or bodies of safes, will very much protract the labors of the burglar; *indeed, it will be necessary, in order to remove one sheet in succession, to cut out the arbors*, which are made of the hardest steel. The arbors may be tapped through the entire series of plates and the inner end rivet-headed, instead of keyed, as showed in the drawing, or the inner plate, as well as others in the series of plates, may be put together in sections, and, fitting into notches in the arbor or arbors, secure them in position. In this latter construction the arbors need not be conical, but may have any cross-section, tapering longitudinally."

This is all the language the patent contains in reference to these arbors, and, giving it all full weight, it does not require, it is submitted, any modification of my statement as to the meaning of the claim. The only functions present to the mind of the inventor are expressed in the language italicized, to wit: 1st, the more effectual binding of the plates in a "*compact mass*," or solid wall; and 2d, to resist stripping, or the separate, and successive, removal of the plates; both of which functions are performed exclusively by the *taper* of the arbor.

In addition to their tapering form, however, some provision is necessary for securing them in place. The inventor refers to several of the old, and well-known, methods used for such purposes, without, as will be noted, laying particular stress upon, or limiting himself to, any of them. He says, "being tapped in from the outside of the door or casing, and keyed upon the inside" and "being tapped into the two innermost or all of the plates, and keyed in position." Also: "The arbors *may* be tapped through the entire series of plates, and the inner end rivet-headed instead of keyed." And in the claim he says they may be

"secured in plates by the key 2, or in other substantial manner."

This tapping of the plates, as well as the other modes of securing the arbors in place, he describes as being old, viz: "The most approved method of securing together the numerous plates forming the casings and doors of safes is by means of screws tapped in from one series of pairs or triplets of plates," and he refers to figure 2 for illustration.

Respondents' arbors are neither keyed nor riveted, interiorly; but are secured by nutting. And complainant claims that mode, although not specifically mentioned in his patent, as being within the purview of its terms, from which it follows, if complainant is right about it, that all these different forms of securing these arbors or bolts in their places are old, and equivalents of each other.

The patent also describes these arbors as being so placed in the wall as to leave no projecting head, viz: "A smooth surface in the plane of the outer face of the door is presented, giving no means of removing the arbor 1, even should the key 2 be removed." This feature of his construction the inventor also describes as being old, viz: "The most approved method" * * * "presenting no rivet heads upon the outside surface of the safes."

So in reference to the material from which his arbors, and plates surrounding them, are to be made. He says the arbors "are made of the hardest steel," and the plates are a "series of alternate iron and steel plates." That the material of the arbor is not of consequence complainant admits, in saying that respondents use his arbor, although their arbors are not made of steel, but of steel and iron welded together. So of the material of the plates: respondents do not use a series of alternate iron and steel plates; nor do they use steel plates at all; indeed, so immaterial was this, in the judgment of complainant's counsel, that they have not taken any proof as to what material is used by respondents in their plates. Additional proof of the irrelevancy of the material of which the arbors and plates are composed, if required, will be found in the fact, recited in the patent, that

the invention is not limited to safes of any kind, but applies as well to "other secure receptacles." Conclusive proof that the terms of the claim will be satisfied by any device that may be expressed by the phrase "conical or tapering arbor secured in a substantial manner" is to be found in the following recital of the patent, viz: "The arbors may be tapped through the entire series of plates, and the inner end rivet-headed, instead of keyed, as shown in the drawing, or the inner plate, as well as others in the series of plates, may be put together in sections, and, fitting into notches in the arbor or arbors, secure them in position. In this latter construction the arbors need not be conical, but may have any cross-section, tapering longitudinally."

A sketch of this construction, made by the witness Knight, at page 301, an examination of which will show that, in order to be within the Hall invention, it is not necessary that an arbor should be conical, but only that it tapers sufficiently to bind the plates into "one compact mass," and to resist stripping. Such examination will further show that neither "tapping" through the plates, nor interior fastening, are essential conditions of the Hall arbor; for here "tapping" is absolutely impossible, and interior fastening, such as riveting, or keying, unnecessary.

We say, then, that a fair and honest reading of the patent requires that the claim be construed to be for a tapering device, secured in a substantial manner in the door or wall of a safe, or other secure receptacle, to bind the plates composing such wall, into a compact mass, and resist stripping.

This construction is exclusively based upon the patent, to the exclusion of "the state of the art," which, it is submitted, can not be examined, in this case, for the purpose of varying the construction above given.

The general doctrine in reference to the use of "the state of the art," in construing patents, is, of course, admitted, and believed to be too well understood to require even a general statement of it. My proposition, however, is that where a patent describes, in addition to the germ of the invention, additional qualities, or characteristics of con-

struction of the main subject of invention, which are, by the terms of the patent left optional to be used, or not, as the judgment of the user may dictate; and such additional devices, or characteristics, would not of themselves, and without being combined with the germ, or substance, of the invention, sustain a patent; there, such additional qualities or characteristics, shall not be taken to be a part of the invention patented, either for the purpose of aiding or preventing infringement; or of anticipating or preventing the anticipation of the patent. Thus, the patent in controversy says, in effect, you may tap the arbors through the plates, composing the wall, or through any number of them; you may rivet the arbor, or you may key it; or you may dispense with either or all of these, the only essential being that the arbor shall taper and be properly secured. Now, it being perfectly evident that all of these modes of security are old—ordinary shop devices—and not, in themselves, sufficient to sustain a patent, my proposition is: that the Court is not at liberty, by construction, to say that any of these suggestions is a portion of the invention claimed, either for the purpose of preventing anticipation of the patent, or for any other purpose. The reason of the rule is this: If the Court should find, from the state of the art, that the essential device which the patent makes the germ of the invention was old, and should attempt to save the patent from a judgment of want of novelty, by so construing the claim as to make it cover not only such germinal, or essential, device, but also one or more of these subordinate modes of construction, it would thereby be, in effect, construing the patent to be for a non-patentable subject-matter.

This Court, in *Russell* v. *Dodge*, 3 Otto, 460, has considered this subject with care.

In order to thoroughly understand this case and its bearing upon the case at bar, it will be necessary to examine the case of *Klein* v. *Russell*, 19 Wall. 465, which was upon the same patent. The suits were upon a reissued patent, the original of which contained the following claim only: "The process, substantially as herein described, of treating

bark-tanned lamb or sheep skins by means of a compound composed and applied essentially as specified."

The specification attached to the original patent described this compound as being composed of "heated fat liquor" and certain other ingredients. There does not appear to have been any dispute but what this original patent was limited to a process performed by means of a compound of "*heated* fat liquor" and certain other ingredients.

This patent was reissued, the specification somewhat changed, and the following additional claim taken: "The employment of *fat* liquor in the treatment of leather, substantially as specified."

It will be noted that the latter claim only calls for "fat liquor," not for "heated fat liquor."

It appears to have been admitted that if this claim covered "fat liquor" simply (heated or unheated), then the patent was void for want of novelty; but, if the claim was to be read as being for "heated fat liquor" only, then the reissued patent would be valid, and the defendant an infringer. The specification of the reissue contained the following, 19 Wall. 465: "The principal feature of my invention consists in the employment of what is known among tanners as fat liquor, which is ordinarily obtained by scouring deer skins, after tanning in oil, but which, when it is not convenient to obtain in this manner, may be produced as a liquor having the same character—obtained by the cutting of oil with a suitable alkali. In treating leather with the fat liquor, it is desirable to heat the liquor to or near the boiling point, and it is preferred to use the same in connection with other ingredients. Thus, for instance, there may be added to each ten gallons of such *heated* fat liquor, eight ounces sal soda * * *."

The plaintiff in the first case (as in the last) insisted, that the proper construction of the patent would limit the first (or new) claim to the use of *heated* fat liquor, under the spirit of the maxim, *ut res magis valeat quam pereat.* The plaintiff there did not see that this was asking the Court to construe the patent to be for a process of heating this "fat liquor;" and, for that matter, neither did the Court see it; for it held

that the claim in question was for the heated fat liquor only, used as specified. By construing the patent in this way the Court was enabled to hold the defendant as an infringer, and to hold the patent valid at the same time, and for the accomplishment of this purpose they used the phrase "substantially as specified," accompanying the claim as requiring, or at least justifying, the insertion of the word "heated" into it.

In the second case above referred to, 3 Otto, this was the immediate point before the Court. After quoting the claims of the patent, as above, together with some portions of the specification, the Court say, p. 462: "It is clear from this statement that the patent is for the use of fat liquor in any condition, hot or cold, in the treatment of leather, and for a process of treating bark-tanned lamb or sheep skin, by means of a compound in which fat liquor is the principal ingredient. The state of the liquor is not mentioned as essential to the treatment, or to accomplish any of the results sought. It is only stated as a thing to be desired, that the liquor should be heated, and that it would be preferable that other ingredients were mixed with the heated liquor to make the compound mentioned. In other words, the specification declares, that by heating the liquor the effect desired will be more readily produced; that is, *more speedily or with less trouble and expense*, not that the heating is in any respect essential to the treatment. *Where a useful result is produced in any art, manufacture, or composition of matter by the use of certain means for which the inventor or discoverer obtains a patent, it is, as justly observed by the presiding justice of the Circuit Court, too plain for argument, that the means described must be the essential and absolutely necessary means, and not mere adjuncts, which may be used or adandoned at pleasure.*"

And this Court go on to say that the reissued patent is void as being for a different invention from the original, or if that difference—between fat liquor and heated fat liquor—be not sufficient to invalidate the reissue for new matter, then it is void because the subject-matter of its claim—fat liquor—was known and used before the complainant's invention. And in reference to the mode in which this point

was disposed of in the former case, *Klein* v. *Russell*, the Court say, 3 Otto, 465: "What was subsequently said of the character of the first claim, so far as it conflicts with the construction here given, does not meet our approval, after the extended consideration the subject has since received." See also, *Roberts* v. *Ryer*, 1 Otto, 150.

We say the only thing made "absolutely necessary" by this patent is the tapering arbor, the remainder are, at most, "mere adjuncts which may be used or abandoned at pleasure;" or, to be more accurate about it, they are suggestions of more, or less, perfect workmanship.

HALL'S CONICAL BOLT, PATENT OF 1860, AND FARRELL & WEIMAR'S CONICAL BOLT, AND REJECTED APPLICATION FOR PATENT FOR SAME, EACH ANTICIPATES "CONICAL BOLT PATENT" IN ISSUE; ALSO, OF THE HALL, FARRELL & WEIMAR INTERFERENCE.

Our apology for grouping these together is, that in the history of complainant's patent, in issue, these devices have become so linked, each to the other, and to the subject of the claim under consideration, that neither of them can be so appropriately considered apart from the other. "Respdts. Ex. Farrel & Weimar" shows a sample of the bolt used by Farrel & Weimar alleged to anticipate complainant; and "Respdts. Ex. Hall Conical Bolt" shows a sample of the conical bolt described in Hall's patent of 1860, and used publicly by complainant from 1859 to 1867. It will be understood that the insistence of respondents in reference to the patent and public use, shown in "Respdts. Ex. Hall Conical Bolt" is that it shows the patent in issue to be invalid because it contains that invention, and, besides being a prior patent, was in public use for more than two years prior to complainant's application for the patent in issue. The claim made for the Farrel & Weimar use, shown by the other exhibit, is that it anticipates the invention of complainant.

After the grant of Hall's patent of 1867, Farrel & Weimar made an application for a patent for a conical bolt

upon which application an "Interference" was declared before the Commissioner of Patents, and testimony taken by the parties, respectively, as to whom priority of invention should be awarded to. Farrel & Weimar proved, beyond dispute, that they had conical bolts, similar to those claimed by both parties, in public use as early as May, 1864, and from thence on, continuously, to the date of the interference. It will be noted that this use was about three years earlier than Hall's application for his patent. When Hall took his testimony in answer to Farrel & Weimar's, no attempt was made by his counsel to disprove Farrel & Weimar's testimony; but, in order to neutralize it, Hall offered abundant testimony to show that he had conical bolts in use as early as 1859 or 1860. The result was priority of invention was declared in favor of Hall, and Farrel & Weimar's application refused. Of course, if the testimony of either party to that interference be given the same effect here that it was there, it will be sufficient to invalidate Hall's patent, for it will show a public use, by Hall, of his invention in issue here, more than two years prior to the application for his present patent; or, in the case of Farrel & Weimar, it will show an anticipation of complainant's invention. Substantially the same testimony that was before the Commissioner of Patents in that interference has been taken *de novo* in this case; and, in addition, a certified copy from the Patent Office of the interference testimony is before the Court.

Before commenting upon this testimony it may be well, for greater clearness, to offer a few remarks as to the present legal status of the Hall patent, as the result of this "Interference."

In an Interference the Commissioner of Patents has power to declare which of the parties is the prior inventor, and, in pursuance of this judgment, he has power, further, to grant a patent to the successful contestant, and to refuse a patent to any party not successful; but he has not power to annul a patent already granted.

When this "Interference" was declared, Hall's present patent had been granted, the "Interference" being between

the application for patent by Farrel & Weimar, and the patent of Hall. An examination of "Respdts. Exhibit Farrel & Weimar Patent," p. 903, *et seq.*, being copy of file and contents of their rejected application, in connection with date of Hall's patent will show this. Now, the testimony of Farrel & Weimar, if Hall had not taken any subsequently, would have authorized the issue of a patent to them, in which case there would have been two patents in existence for the same invention, the earlier one, however, Hall's, having the judgment of the Commissioner of Patents against its validity.

This is, however, upon the assumption that Farrel & Weimar's testimony only anticipated Hall's patent, without going so far back as to show two years public use of the invention before their application, in which latter case the Commissioner would have refused to grant a patent, notwithstanding F. & W.'s priority. This testimony of F. & W. did in fact show this two years prior public use, and, upon these facts being taken as proved by F. & W., no further patent could issue as the result of that interference.

Hall, however, did take further testimony, as he had a right to do, and proved a use of conical bolts as early as 1860, and, upon this, the Commissioner of Patents awarded priority in his favor, and refused the application of F. & W. Now, this evidence of Hall's did not attempt to disprove the facts, or public use, shown by Farrel & Weimar. He, Hall, used his right to take testimony for the sole purpose of combating the fact that F. & W. were the first inventors of the invention in question. He succeeded in this, in the judgment of the Commissioner of Patents, by proving a use of these conical bolts himself back as early as 1859 or 1860. In doing this, however, he was compelled to aid in still further disproving the validity of his own patent then and now in issue, if any doubt, perchance, remained upon that subject.

As complainant is understood, his reply to this portion of our case is, that, notwithstanding this action of the Patent Office, the thing of which the public use is proved did not contain the invention secured by his patent; that

the public use by Hall from 1860 forward, while it was sufficient to enable him then to swear that it was the same thing as his 1867 patent; sufficient to enable his then counsel to so assert, and represent to the Commissioner of Patents; and, also, sufficient to induce the Commissioner to decide in favor of Hall, and thereby prevent Farrel & Weimar from getting a judgment of priority, still it is not sufficient in this case.

I propose an examination of the soundness of this reply with reference, as well to the facts as to the law. A glance at the drawing accompanying "Respdts. Ex. Farrel & Weimar Patent," p. 909, will show "conical screw bolts," figures 2 and 3. As shown, they differ in the mode of securing them in place from Hall's, in this, that the threaded part is used in combination with a separate nut on the interior of the safe, while in Hall's the plates of the safe, or some of them, are used for the nut. But, like complainant's patent, the exhibit gives particular instruction that the bolts be secured in a substantial manner, thus: "The threads on the inner ends of the bolts should be large, and the nuts of greater thickness than the separate plates; and the enlarged portion of the conical bolts should present a greater bulk of resisting metal than can be obtained by the threads of screw plugs inserted as represented in fig. 4. In this way we are enabled effectually to guard against all attempts to rip off the plates by the mode represented in the said fig. 4."

Like complainant, too, F. & W. did not bind themselves to the exact mechanical construction of bolt shown, thus: "The conical portion of the bolts may be nearly as long as the thickness of the compound plate, but we prefer to have them conical the whole way, as represented."

And, in their claim, they present the same anxiety as Hall, not to have their patent limited by any questions of degree, or any mere alternative shop equivalents for securing their bolts: "What we claim as our invention, and desire to secure by letters patent, in the construction of compound plates for burglar-proof safes, vaults, and doors, is the method substantially as herein described, of connecting

and binding together the series of plates by means of conical *screw* bolts made drill proof substantially as and for the purpose described."

The exhibit "Farrel & Weimar patent" is introduced into this cause for two purposes:

First: To show that the same identical invention is described and claimed in it, and in complainant's patent in issue, and this it is submitted has been shown; and in this connection beg leave to remind your Honor's of the reasoning in the case above cited from 3d Otto.

The second purpose for which the exhibit is introduced, is to explain the object and principle of the prior use of Farrel & Weimar; or, in the language of the Court, in *N. W. Fire Extinguisher Co.* v. *Philadelphia Fire Ex. Co.*, 6 O. G. 37, it is useful in ascertaining "the design of the inventor, and the principle, intended functions, and mode of operation of his mechanism."

The testimony offered by Farrel & Weimar, in the "Interference," will be found at page 664, and consists of four depositions, viz: Farrel, Weimar, Noyes & Roberts. Three of these witnesses (Farrel, Weimar & Noyes) have been examined *de novo* in this cause, and their depositions respectively will be found at pages 166, 99, and 114.

I will state the substance of this testimony, taking especial care not to make any statement of the effect, or result, of the depositions without citing the answers relied upon. Some time prior to March, 1864, a safe intended to be fire and burglar-proof—belonging to one P. H. Stevens, of New York city, was opened, by the process called stripping, that is by the successive removal of its plates. The safe was made by Herring & Co., of N. Y., of which firm John Farrel, above referred to, was a member, and Jacob Weimar, also above referred to, was the superintendent of their factory. Upon notice being communicated to Mr. Farrel of the successful opening of one of their safes, he proceeded to design a safe containing devices intended to resist stripping. He instructed Weimar to build a safe for this Mr. Stevens, said safe to contain conical bolts, made of welded iron and steel, hardened, which bolts were to pass

through the doors and be secured interiorly, by a key, or nut. His instructions to Weimar were to make the bolts conical from the outside of the door, where the base of the cone was, inward to the Franklenite metal. Whereupon Weimar further suggested that the taper should continue clear through the door.

The old Stevens safe was then brought to the factory and fixed up, and another safe made to fit inside of it, known in the trade as a burglar proof chest, the doors of which contained these conical bolts, made of welded metal, and secured inside by nutting. This chest was delivered May 30th, 1864, to Stevens. About the time this Stevens chest was being made they commenced to build another safe, containing said conical bolts, which was for stock; that is to be exhibited at the store, so that the firm might advertise this improvement to their customers, as an additional provision against the efforts of burglars. This safe was exhibited in the store from the time it was finished, sometime during May, 1864, until 1st of December following (about 7 months) when it was shipped to the Second National Bank of Wilkesbarre, Pa. It appears from the testimony of Farrel & Noyes that this feature, among other improvements, was always described, and shown as far as possible, to customers at the store, and the result was that they had made and sold, between the time of the manufacture of the Stevens safe (March, 1864,) and the 1st of January, 1865, as many as fifty safes, each containing these conical bolts in their doors, and some of them contained these bolts in their other walls. These facts there will be no dispute about; they were a matter of public notoriety, and many of the witnesses called in the case, to testify in reference to other matters, showed a perfect familiarity with them—notably Cady, 78—32, 33.

For greater clearness we will give here a little information about the general construction of these Herring & Co. safes. At that time the general mode, of making safes burglar proof, practiced throughout the country, was to make the safe wall with a series of alternate iron and steel plates." The theory was that the wall thus composed had

a toughness—resulting from the use of soft iron plates—that precluded the possibility of pounding it to atoms with sledges; and, upon the other hand, the use of the hardened steel plates prevented drills from passing through it. This mode was practiced by Herring & Co.; but it was not their general mode. That was, as described by Farrel, Q. 55, p. 176, by the use of a plate of material, known as Franklenite, in addition to the plates of iron and steel. This Franklenite is a species of zinc ore, and is so hard that steel can not be made hard enough to cut or penetrate it. But it is correspondingly brittle, a slight tap of the hammer being sufficient to shatter it to fragments. From this it will be seen that it has properties that render it very desirable as a component of a burglar-proof wall, and other properties which render its use objectionable. The result is, it is a subject of debate at the present day, whether its presence adds additional security. In the East it is used in the best burglar-proof work, while in the West it is not so used. This explanation will be found important to be borne in mind, as very little reflection will be required to convince any one that in safes constructed in part of this material it would not answer any useful purpose to have the conical portions of the bolts extend through the Franklenite; for if a burglar should succeed in stripping such a structure until he arrived at the Franklenite, further stripping would, in no event, be necessary, as a tap of a hammer would remove the whole of this material. For this reason the bolts were not made conical to as great a depth in structures containing this material as in structures which did not contain it.

Now, although the above statement is based exclusively upon the depositions of the above-named witnesses, taken in this cause; nevertheless, this is substantially the testimony that was taken in the interference before Hall was called upon to take any testimony.

Vide Testimony of Farrel 166—3, 4, 5, 6, 7, 8, 35, 38, 39, 40, 41, 42, 43, 47, 48, 50, 52, 59, 60, and 62.

Testimony of Weimar 99—2 to 16, 45, 47, 48, 50, 52, 53, 54, 55, 75, 76, 77, 80, 83, 84, 87, 91, 92, 96, 103, 104, 105.

Many things in Weimar's testimony will be better understood if it be recollected that he is German, and that his unerstanding and use of English is quite imperfect.

Testimony of Noyes 114—2 to 8, 11, 27, 28.

These extensive references are made that if there should be any dispute at the hearing as to any of the facts recited, your Honors may have the means of verifying the above statements. Hall met the case thus made in the "Interference," by proof of a use at his factory of conical bolts or arbors as early as 1860, and from thence forward continuously, and this he was compelled to do in order to avoid judgment of priority being rendered in favor of Farrel & Weimar. Two of the witnesses then examined by Hall, to-wit: himself and Michael Hemler, his then superintendent, were called by *respondents* in this case, who are thus able to show the facts that were put before the Commissioner of Patents in the "Interference," by Hall, without reading from the testimony taken in the "Interference," although, of course their accuracy may be verified by reference to the "Interference" testimony. Their testimony is, in substance, that Hall used bolts and arbors such as is represented in "Respondent's Exhibit, Hall Conical Bolt," from 1859 or 1860 down to 1867, in connection with his locks.

In addition to this there was a use, it is stated, of plain conical bolts or arbors by complainant about the year 1859 or 1860, and, perhaps, later.

Appellant's counsel are understood to insist now that such bolts were then used in but one safe, and that that was merely an experimental use, and some of the testimony in the present record would appear to support this proposition.

There is no suggestion of such limitation or of secret or experimental use in the interference testimony, as witness the following, page 670, question 3, testimony of Hall:

"*Q.* 3. State what knowledge you have had, in manufacturing safes, of the use of a series of plates, united by conical bolts, made drill proof, and when and where you first had knowledge of their use?

"*A.* The first was in the year 1858 or 1859. I came across one John P. Lord's lock, which was said to be a com-

bination—no key-hole bank lock. I negotiated with the parties representing it to try and introduce it and manufacture it. I then began to examine into it more particularly, and found that the knob or dial projecting through the door seemed to be very insecure in its construction. I set myself about so as to invent some better way of securing the protection to the lock, and also to the plates of the doors. I then invented a double and a single conical-shaped arbor or plug, made drill-proof, composed of wrought-iron and steel, welded together—the design of which was to fully protect the lock against sledge-hammers or other tools for driving plug or plugs in, or from being drilled into, they being hardened. The further design of the said drill-proof plugs or arbors was to secure together a series of plates of wrought-iron and steel, or other suitable metal, whereby they could not be separated or pulled apart—more firmly binding them together than had been our former method of making safes or joining together such series of plates. Some time after, during the years 1859 and 1860 (the exact period of time I can not remember fully), we made burglar-proof safes of a series of plates, composed of iron and steel, joined together, in which we had used more of the conical drill-proof bolts or arbors than we had formerly been in the habit of doing, for the express purpose of more securely fastening the plates together. We made them in the city of Cincinnati, in our factory, which was situated about the middle of the square bounded by Columbia, Sycamore, Front, and Main streets. We have also used them to a very considerable extent, since that time, in our factory situated at the south-west corner of Plum and Pearl streets. I received a patent for my double conical drill-proof arbor in the year 1860. My design of that was to secure full protection to combination no-key-hole bank locks My single arbor, I don't think I made any claim on at that time, but used it for the express purpose of binding the series of plates together. This was also a conical drill-proof bolt, made of iron and steel. Our modes of fastening the above-described arbors were in different ways. Some we made conical at the smaller end were

made soft, so that we could rivet them down into a countersunk plate; others we cut a thread upon at the smaller end of the arbor or drill-proof bolt, which was done and fitted up before the conical-shaped arbor or bolt was tempered. Others were made with a thread cut upon the end of them, designed for a nut, which was designed to be used on the smaller end of them to fasten them more securely, so that they could not be withdrawn from the outside. The conical-shaped arbor, with the thread cut upon the arbor, was designed to be screwed into the inner plate of a series of plates, and there a key-seat cut in each of the threads of the plate and of the arbor, so that keys could be driven in to prevent their being unscrewed and withdrawn from the outside, thereby making them secure against the drill or the use of sledge-hammers or other tools for forcing them in, being of a conical shape, or from removing any of the series of plates through which they passed."

And, on cross-examination, question 3, page 671:

"Mr. Hall, you say you made safes, in 1859 and 1860, with a single conical bolt fastening the plates of the door, with a screw-thread on the end of the bolt, secured by a nut. How many of these safes were manufactured, and where are they?"

"*A.* We used, in putting on our locks, one double one and one single one. I know of but one that I can refer to, made at the period you mention, as they were made generally for the trade. That was sold to Moses Fowler, of Lafayette, Indiana, in 1860, who was there in the banking business."

If this testimony be credited (and all the testimony offered upon the part of Mr. Hall, in the interference, was to the same effect), and these 1859–60 bolts contained the invention now in issue, that ought to end this controversy.

Counsel for appellant are understood to repudiate the above now; though, as to what their present position is in reference to these bolts, it is more difficult to say. Appellant testifies in this suit as follows, page 599 *et seq.*:

"*Q.* 57. Did you think at that time (that is 1860) that there was any difference in the practical value, so far as resists

stripping was concerned, between bolts such as put in the Moses Fowler safe and those shown in the 1860 patent; and if you did, which did you then think was the best adapted to that purpose?"

"*A.* As the conical bolt was in its crude state, and offered very little protection as a fastening, I was under the impression that the countersunk bolt, as used for the arbor, having its screw upon the end of it, and the head of it being made conical, it would offer some stronger security; but I had those put in this safe here, the Lafayette or Fowler safe (that is, the plain conical bolt), thinking it would afford a great deal of security."

"At the same time I knew there must be some changes or alterations made in it some way, or else it didn't cover what I designed it for, consequently left it open for further improvements."

This labored effort to save his patent from a judgment of invalidity consequent upon the public use of these bolts for more than two years prior to his application for his patent, as shown in the interference testimony, under the act of 1839, sec. 7, would indicate that counsel intended to fix themselves upon this experimental theory as the way to save their patent.

If I am right about this, I shall assume that the proposition that an experiment, or a use that involves any element of experiment, can not evidence perfected invention, is one that it is not necessary to discuss in this Court.

Coffin v. *Ogden*, 3 Fish. 649.

While it is certain that there was no special significance attached to these 1859–60 single bolts when put in, and, in that sense, their use may be said to have been experimental, it is equally certain that there was no attempt at secrecy in their use.

In question 99, p. 43, counsel try to lead appellant into the statement that the use of these bolts was intended to be kept secret, to which he replies: "As to secreting the conical bolt in any safe that is made with a conical bolt, the same precaution is taken in all cases to hide them from view."

Any effort to prove attempts at secrecy when these bolts were used, when taken in connection with the interference testimony, would be quite futile.

Now, whether there was a continuous use of these single bolts from 1859 onward, as proved by the interference testimony of Hall and all his witnesses, or whether their use was limited to either two or three safes according to Mr. Hall's 25th answer, p. 28, or whether such use was limited to exactly two safes as stated in his 99th answer, p. 43, or whether, finally, there was but one safe having such bolts as testified by him in answer 37, p. 596, there is no doubt at all that that use was such a public use of the invention as to invalidate the patent.

Egbert v. *Lippman et al.*, 14 O. G. 822.
" " " 21 " 75.

I hope to be credited with due generosity in that I have not offered any comment upon the varied hues of Mr. Hall's testimony in the foregoing referred to answers, and I am the more inclined to treat this appellant generously in this regard since he has shown a disposition, in his 37th answer last above referred to, to apologize for his other testimony not consistent with that answer.

There is still another view of this single bolt given in the testimony of Michael Hemler, who was Mr. Hall's superintendent when the use in question took place, and who was Mr. Hall's most important witness in the interference. His testimony upon this point will be found at p. 218, questions 4, 5 and 6, and at p. 225 *et seq.*, questions 71 to 101.

The general effect of this testimony is: that there was but one safe which contained these single bolts made before 1867; that Hemler had them put into that safe of his own motion; that Mr. Hall, when he saw them being put in, told Hemler he was a fool, and ridiculed the idea that such things had any particular value; that Hall never did claim until the time of the interference, 1868, that he was the inventor, introducer or suggester of the bolts in question.

The *manner* of appellant's denial of Hemler's statements in response to the leading questions of his own counsel (p. 591, ques. 1 *et seq.*) is not without significance when measur-

ing the relative values of these depositions. No other witness but these testifies to this use in this case. Which of them is the more reliable?

It will be observed that the *prima facie* value of the patent does not aid Hall's testimony in this connection, as that only bears upon the inquiry as to whether the patentee was the first inventor at the date of the patent, and at the date of the application therefor, when that is in evidence. If a patentee would show an invention earlier than either of the above, he must rely upon the strength of the evidence adduced by him.

2 Fish. 297; ibid. 440.

Sufficient reference has been already made herein to appellant's testimony to enable your Honors to judge of its weight in this comparison. As to Hemler, it is to be said he has no interest or feeling of any sort in this controversy, and nothing in the way of criticism can be said against his testimony except it be the fact that during his testimony in the interference he did not say that he, and not Hall, was the inventor or suggester of the bolt in question. The short answer to that, however, is that no question was asked him which had any tendency to suggest such an inquiry, nor is there any ground for believing that he knew of the real issue in that controversy other than so far as his then employer deemed it prudent to tell him.

If the interference was not decided in appellant's favor upon the evidence of these single conical bolts then it must have been so decided upon evidence of the use by Hall of his conical lock-arbor, and encasing conical bolt, described in "Respondent's Exhibit Hall patent of 1860," p. 911 *et seq.*, and illustrated in this cause by the model "Respondent's Exhibit Hall Conical Bolt."

With reference to this appellant's counsel deny that it contains the invention in issue.

Before examining this question, by the light of the testimony, it may be remarked that it is by no means clear that Hall is not estopped to deny, that this contains the invention claimed by him in the 3d claim of his 1867 patent, p. 868. The complainant introduced evidence in the inter-

ference, as well by the testimony of himself, as of other witnesses, to prove that the use of the invention there and here in issue, proved by Farrel & Weimar was not the first use of that invention; and did prove, to sustain that issue, that bolts similar to "Respdts. Ex. Hall Conical Bolt," had been used at his factory for four years prior to the use by Farrel & Weimar; and, upon that proof, the Patent Office decided that Farrel & Weimar were not the first to use that invention, and that Hall had used it before them. We say that this admission by Hall thereby became a part of his title, and precludes him from alleging now that the exhibit in question does not contain the invention.

Gresley's Equity Evidence, 456 *et seq.*

Blackstone Com. (Chitty), book 3, page 308.

Bigelow v. *Winser*, 1 Gray, 299.

Whether this be treated as an admission by the complainant, estopping him from denying that the exhibit in question contains the invention in issue; or, whether the action of the commissioner in holding, in pursuance of complainant's request, that bolts, such as the exhibit, do contain the invention in question, be treated as a decision upon the question of construction of complainant's patent, binding upon the complainant, in either case there is plenty of authority, in this class of cases that the complainant is bound by that action.

Potter v. *Pike*, 3 Fish. 57.

Waterbury Brass Co. v. *N. Y. & Brooklyn Brass Co.*, 3 Fish. 48.

Westlake v. *Carter*, 6 Fish. 526.

WHILE INSISTING UPON THE ABOVE PROPOSITION, WE SAY THAT THE EXHIBIT "HALL CONICAL BOLT" AS A MATTER OF LAW AND FACT, IRRESPECTIVE OF THE ESTOPPEL, DOES EMBODY THE INVENTION SPECIFIED IN THE THIRD CLAIM OF THE PATENT IN ISSUE.

The exhibit embraces two devices, the arbor, which is solid, and revolves, and the bolt which is hollow and stationary, and, although we would feel justified in saying that

each of these contains the invention in question, we will limit our comparison to the hollow bolt. We do this, as well, because it has more in common with the *type* of the invention relied upon here as being *the* invention, as because it is the thing or at least one of the things relied on by Hall in the interference.

If this stationary bolt does not contain the invention in question, why does it not, or what is there essential to an embodiment of the invention that is not contained in the exhibit? It is made of drill-proof material, and the bolts represented by it were always made of drill-proof material.

It is conical in form for the purpose of resisting being driven into the safe, and to prevent stripping the plates over it. Hall, ante, p. 16—3; p. 33–52. It is secured in place in the plates precisely in the manner that Hall shows (fig. 3, p. 866) his present bolt to be secured in place. I do not recite these points of resemblance because I think them essential to an embodiment of Hall's invention, as I have heretofore stated what I conceive to be the correct construction of the patent in issue, but because they are existing resemblances. They differ in this: 1st, the exhibit has a hole in it for the arbor to pass through; 2d, it, the exhibit, is not conical for so great a distance through the safe, that is, it is not so long a conical bolt, and, 3d, it is intended to be argued, as I understand it, that there is some difference between them in reference to one of the means of securing them in the plates, to-wit: the screw-thread upon the bolt, but this we deny as matter of fact, as well as deny the consequences claimed to flow from it.

OF THESE IN THEIR ORDER, AND, FIRST, THE EXHIBIT HAS A HOLE IN IT, WHILE THE BOLT CLAIMED IN THE PATENT IN CONTROVERSY HAS NOT.

Upon this, we say that this hole does not interfere in its performance of any of the functions performed by the arbor or bolt claimed in the patent in issue. It subserves the same functions precisely as the solid arbor or bolt does, in reference to the plates of the safe, but it serves one more.

It protects the arbor as well as the plates. And this is the real objection urged by complainants. They do not put it in these terms; they say it is not drill-proof—that it is absurd to say that a thing is drill-proof which has already a hole in it, dispensing with drilling another hole. By this, it is not meant that the material of which this bolt is composed is not drill-proof—that stands confessed. Nor do they say that this drill-proof capacity does not resist as well drills, as the action of wedges, for the protection of the plates and also for the protection of the inclosed arbor. But, they say, in order that it may serve all of the purposes of its use it is essential that it should have the hole, and this hole is neither essential nor useful for the solid conical arbor or bolt; and they ask this Court, in all seriousness, to say that the removal of one of the functions or capacities for usefulness of this bolt is an invention, a "mental result," and gives to complainant the exclusive right to use this bolt against all the world, except those who will use it in connection with another solid bolt or arbor. It is rather curious too, that it has not occurred, or, rather *does not appear* to have occurred to the learned expert who announces this solemn doctrine, that this hollow drill-proof bolt is used in connection with another drill-proof arbor, or bolt, that is not hollow. Curious this did not suggest filling up the hole? Complainant's argument, upon this point, amounts to a request that this Court shall so construe this patent as to find that this invention consists in dispensing with one of the functions of the conical bolt, patented by Hall in 1860, by omitting to bore a hole in it.

2d. The second alleged difference between this exhibit and the invention in issue here is, that the exhibit is not conical throughout the structure. As this is a point relied upon a great deal, and pointed to with emphasis as a dividing point between the invention in question and many of the exhibits introduced by respondents to show want of novelty in complainant's patent, we propose a full examination of this distinction.

We say this is a question of degree, and that it is entirely disposed of by reference to the doctrine of the case of

Smith v. *Nichols*, 21 Wall. 112. Complainant, upon the other hand, says that this is the very gist of complainant's invention, and that the difference is one of substance; that where a bolt or arbor is only conical throughout a portion of the penetrated structure, it is a countersunk bolt, and does not fall within the nomenclature of their patent, which, as they say, is for a "conical bolt." If complainant is right about this, it is a mere matter of definition of a word, or, at most, of their patent, and there ought to be no difficulty in settling the matter.

In this connection, it may not be amiss to note the fact that this complainant sued these defendants and others upon this patent for the use of the same device they are now using as early as April, 1870. At that time, a motion was made for a preliminary injunction, which was withdrawn by complainant upon the offer of respondents to read, *as their defense*, Mr. Hall's deposition in the interference above referred to, which deposition refers to the exhibit under discussion, and calls the bolts represented by this exhibit by their proper name—conical bolts. Respondents then took their testimony to show want of novelty, as a defense to that suit. They proved, in that case, the prior use of the Farrel and Weimar, and Butler and Cady bolts, but neither of the parties then paid any attention to whether or not these anticipating bolts, or any of them, were conical for a longer or shorter distance. After respondents had taken this testimony, the cases were permitted to hang along upon the docket for some years, and were finally dismissed by complainant without prejudice. If it was perfectly obvious that a bolt not conical throughout the structure was not the thing patented, why did not complainant prosecute the former suits to decree? Perhaps this matter was only obvious to a second sight. This second sight will be fully explained by reading the deposition of M. A. Dalton, page 647 *et seq.;* and will be further illustrated by reading allegations in respondent's answer, p. 6 *et seq.*

In order to show a recognized distinction between a bolt, or arbor, conical part of the way and one all the way conical, it was necessary first to provide a different name for each. This has been done, and a bolt conical part of its

length is called by complainant, for the purposes of this argument, a countersunk bolt. The meaning of this term is given by the expert witness Knight, 290—163 and 307—212, to which your Honors' attention is respectfully invited. It may be remarked that the word countersunk is not to be found in Webster, although the word countersink is, and its definition there is in harmony with Mr. Knight's definition of countersunk. A reference to 594—27 will show complainant himself put under training by his counsel in order that he may use this new terminology gracefully; and a further reference to 596—37, 38, will show how difficult it is to break up the habits of a lifetime at the bidding of his counsel.

It is attempted to be shown, however, that there is a difference in their operation that is not a difference of degree, but one of substance or principle. In this effort at plausibility, they do not say that this difference *wholly* depends upon the comparative length of conical portion and cylinder in any such bolt, or arbor; but upon the length of the conical portion as compared with the depth of the safe wall. For instance, it is said that if a bolt is conical for nine inches of its length and cylindrical for an additional inch, and fitted in a safe wall ten inches in depth, such bolt would be a countersunk bolt; while if a bolt be conical for three inches, two inches, or one inch, and has no cylindrical portion, then it is a conical bolt, or arbor. The reasoning upon which this is attempted to be sustained is: that if in any particular structure—say three inches in depth—two bolts be used, one of them being conical throughout the depth of the structure, and the other conical for a less distance, say two inches from the outside, and cylindrical for the other inch (in which case they would call one a conical and the other a countersunk bolt), the former would be more difficult to be removed by the burglar, and upon this, and this alone, they base their distinction. Of course it is obvious that a bolt conical for three inches is stronger, and gives more resistance to a burglar than a bolt conical for any less distance. And it is quite apparent that this three-inch "conical" bolt is not so strong, and will not give as much resist-

ance to a burglar, as what they call a countersunk bolt whose conical portion is four inches in length, though it may have any additional cylindrical shank.

From which it would follow that a bolt is strong, and capable of offering resistance to the efforts of burglars, other things being equal, in the direct ratio of the length, of its conical portion, and that there is no difference of principle depending upon the length of the cone.

But it is true, nevertheless, they say, that a safe having these bolts throughout the depth of its walls is better protected against the efforts of burglars than a safe, in all respects similar, would be whose bolts were not conical for the full depth of the wall. And, in affirming the truth of this, we might add, that the ratio of the resistance these safes would severally offer to the efforts of a burglar, would depend upon what length the bolts were conical in the latter; or, indeed, whether they had any conical portion whatever. In all seriousness, we would ask, is not the logical result of complainant's position, that they want their patent construed for good workmanship? As we are attempting to state the argument of the other side, perhaps it would be more satisfactory that it should be done in the words of their expert witnesses and counsel. Cory, superintendent of complainant's factory, states it thus: 559—51; 579—176 to 181 inc.

While reading these citations and what follow, it may be well to bear in mind that the language of the patent is conical or *tapering arbor.*"

Wadman, draughtsman at complainant's factory, states it as follows: 527—71, 72, 73; 531—92, 93, 94.

This is the difference in principal between a short and a long conical bolt; or, between a conical and countersunk bolt, if they prefer it. A bolt conical for three inches of its length is better than one conical any smaller distance, say they; because it will take a longer time for a burglar to get through it, and the increase of time will be in direct ratio with the increased length of cone to be destroyed. A countersunk bolt, they say, too, by virtue of its angle, resulting from its two elements (cone and cylinder) has a

weakness, and may be broken at the weak point by hammering with a sledge upon the outside of the safe. But every bolt secured, interiorly, by nutting, as respondent's manufacture of bolts is secured, has this angle, resulting from cylindrical and conical parts, and every such bolt necessarily furnishes this alleged weak spot, and the tendency of a bolt to break at that point depends upon the length of its conical part, and that, too, whether such weak spot is inside the wall of the safe or not. And every countersunk bolt is necessarily a draw bolt (586—221) they say, not, that such bolt will actually draw the plates any tighter; but, by virtue of their expert theorizing, that is a possibility of any bolt not conical all the way; and, that possibility is increased by the increase of shank, and decrease of conical part, and *vice versa*. And true to their logic, complainant's experts, at least the honest ones, swear that neither of the bolts made by respondents "Complainant's Ex. B. and C." are "conical bolts," for that they have the obnoxious angle resulting from the two elements—and one, at least of them, has it within the wall of the structure. Hendrickson, 418—191, 192; Wadman, 527 *et seq.*, 71, 72; and Betteley, 370—12.

Your Honors will recollect in connection with this reasoning, that complainant's case is attempted to be built upon distinctions so nice as to be, not uncommonly, invisible, for the purpose of obscuring what ought to, and otherwise would, be the palpable fact that they desire their patent to be so construed as to cover good workmanship.

We shall close this portion of our argument by a refference to a peculiar argument made by complainant. The argument is that the change from a countersunk bolt, so-called, to a conical bolt is not a change of degree, but of substance, or principle. Their reasoning may be seen at 621—42, where complainant's expert, Millward, tried to make this clear. Nearly all of their experts have tried this, but this answer will do as a sample: The expert introduces Exhibits "Degree Bolts" Nos. 1, 2 and 3 to illustrate his argument. He says that No. 1 illustrates what degree is. It shows a nest of bolts of different diameters,

each with the same length of cone and of cylinder, and this, he says, is a difference of degree. If this be difference of degree, then the word degree is interchangeable with the word diameter. No. 2 shows a change from cone to cylinder, and *vice versa*. This, it is said, is not a change of degree, but of absolute character. Surely it is not possible that such transparent torturing of words requires any argument? It is said that where a bolt five inches long and conical for three inches, is used in a safe wall three inches thick, it is a conical bolt; but, if put in a safe wall of a depth of over three inches, then it is not a conical, but a countersunk bolt; and the change thus produced is not one of degree, but an absolute change of the character of the bolt. And to prove this proposition about a dozen of experts are called. It must be recollected, too, that the whole of this distinction is outside, and without the sanction of, complainant's patent, and, according to his counsel's reasoning, his patent is repugnant to it. Complainant's greatest objection to a countersunk bolt is, that it is, in its very essence, a *draw* bolt; and, in operation, might possibly have some drawing or binding power upon the plates. But his patent states: "The introduction of arbors for the purpose of more effectually *binding in one compact mass* the series of alternate iron and steel plates in the doors or bodies of safes will very much protract the labors of the burglar."

See Ques. 92–4, p. 483, where one of complainant's experts swears that a device that has this capacity to "bind" is not a conical bolt!!!

Finally, we would refer to the case in the margin as covering neatly the whole of complainant's distinction above discussed, and, it may be added, the whole case as well.

Flood *vs.* Hicks, 4 Fish. 156.

3d. The exhibit in question, "Respdts. Ex. Hall Conical Bolt," it is claimed, is secured in the safe wall in a different way from the bolt shown and described in the patent in issue. Respondents, on the contrary, say that here there is no difference—even in degree. A comparison of exhibits, "Hall Conical Bolt," model of 1860 patent, and "Hall

Conical Bolt No. 2," model of 1867 patent, will show that each is secured in the wall precisely in the same way, it being understood that while "Exhibit Hall Conical Bolt" has a thread upon its end of a length equal to the depth of two or more plates—in this respect resembling "Hall Conical Bolt No. 2"—it was not customary to thread but one, the inside plate of the safe to match this thread upon the bolt. The "Exhibit Hall Conical Bolt No. 2" is threaded in the same way. The accuracy of the latter as a representation of the bolt in issue is not disputed, so far as known, except in the fact that but one plate is threaded in the model to correspond with threads upon the bolt, it being insisted by complainant, as I understand it, that the patent, as well by fig. 3 of the drawing, as by the recitals of the specification, requires that not less than two of the plates be threaded. Whether there is even this divergence between the exhibits—the Hall conical bolts of 1860 and 1867 is the subject of the present inquiry. The only language in the patent bearing upon this question, is: "Being tapped into the two innermost or all of the plates." The drawing shows the *bolt* threaded for the distance of two plates, but it can not be told from it whether the intention was to thread the plates to correspond or not. Now, the patent also recites that the wall of the safe is composed of a "series of alternate iron and steel plates." This, we say, is conclusive of the intention of Hall to require the thread in but one plate, an iron one as the second; or alternate plate, being steel, could not be threaded. Knight, 252—18.

Hall did not thread more than one plate to fit threads upon his 1860 conical bolts ("Exhibit Hall Conical Bolt"), because the steel plate could not be threaded. Berkmeyer, 203—66.

Without further citation from the record, it may be stated as a fact, not only proved beyond controversy, but admitted as axiomatic, by mechanics, that it would be impracticable to fit the thread upon a steel bolt, or arbor, in similar threads upon steel plates which are hardened, or to be hardened, before the insertion of such threaded bolts. Hall, 35—57.

Complainant, however, seeks to avoid the effect of this by stating that his patent does not contemplate the use of hardened steel plates alternating with soft iron plates. He says that he contemplated the use of a material, now commonly used by safe makers, known as welded metal, and this material, he further says, can be threaded and afterward hardened, and threaded bolts fitted in the thread of this material. This material is made by placing alternate layers of thin iron and steel on top of each other, then heating all and welding into one plate by rolling. He says that he meant plates of this material to be alternated with iron plates in his safes. And, consistently with this claim, he says that the language of his patent, "series of alternate iron and steel plates" does not mean what the words import; but that it means a series of iron plates alternated with plates of welded iron and steel. In considering the curious torture that complainant desires the Court to apply to the language of his patent, the Court will recollect the object of this request. It is not for the purpose of obtaining liberty to use these welded plates himself in connection with his patented devices, nor for the purpose of preventing others from using his invention, if he was the first inventor, in connection with them, without liability. Every claim of this character would, of course, be conceded. But he asks, as matter of construction, in order that the functions of his invention be varied, that your Honors make this interpolation in his patent.

If this material be essential in order to utilize the invention, and that fact was known to the inventor, then its omission from the specification would vitiate the patent; or, if the fact was not known to him, and there was no fraud, still it would vitiate his patent, inasmuch as its omission would leave his specification defective under the provision of section 6, act of 1836. If, however, the existence of such welded material was utterly unknown to him at the time of his application for his patent, it could hardly be said that when he said "alternate iron and steel plates," he meant "iron plates alternated with plates of welded iron and steel."

The facts in relation to this matter are these: This welded metal is the subject of letters patent granted to one Terwilliger, and another July 24th, 1866, before which time the material and the mode of making the same were unknown in this country. It was introduced during 1867 and 1868. Hall got his first lot of it May 1st, 1867, more than a month after he applied for the patent in issue (184—127). He does not pretend that he knew of the manufacture in this country prior to that time, but does pretend (183—124) that eleven or twelve years before he had been told of the use of this material in England by *a man now dead*, and says that said person (Bacon) showed him at that time a sample of it. It is submitted as a more rational explanation of this matter, that it is an afterthought; and I say, further, that Mr. Hall did not know before the year 1874 or 1875, that this welded metal could be threaded and receive therein, when hardened, threads upon the hardened bolts, even if it be admitted, *as a matter of courtesy*, that the thing could be done now.

Every practical safe maker put upon the stand, who was not, at the time of examination, a workman in complainant's employ denied emphatically that such plates could be threaded so as to fit corresponding threads upon the bolts. In addition to this, Michael Hemler, who was Hall's superintendent from 1849 to 1867, and from 1871 to 1874 (218—2), denies not only that such plates were ever threaded to fit the threads on the bolts, but further denies the possibility of such threading (220—18, 19, 20, 21, 22, 23, 24). This man had the supervision of the work upon every burglar-proof safe made in Hall's factory from 1849 to 1867, and during the three years 1871 to 1874, and it will be noted, too, that he never was required by Hall to do any thing of the kind. 232—140, 141 and 142.

And John Talbot, who was superintendent of Hall's factory from the time Hemler left Hall's employ in 1867, until the return of Hemler in January, 1871, says that such threading of welded metal plates never was accomplished during his term of employment at that factory, and that it

would be impracticable, and that the witness discussed the impracticability of it with Hall (208—5, 6, 7).

And George Berkmeyer, who worked for Hall among other periods of time, from February 1st to October 1st, 1875 (194—1), never saw, anywhere, these welded metal plates threaded and fitted with threads upon conical bolts, and believes it to be a task that is impracticable. (196—9, 10 and 11.)

In this connection it ought to be noted, for the purpose of determining the amount of credibility to which the testimony of the complainant, Hall, is entitled, that he testified, after the above noted testimony was taken, that all the welded metal used at his factory from 1867 forward, was threaded to receive the corresponding threads upon the bolts (186—132). Subsequently to Hall's examination, above noted, complainant called a number of witnesses, all workmen from his factory, who swore that it was a common custom in complainant's factory to thread these welded metal plates. No one of them could, however, point to a safe having its welded metal threaded prior to the manufacture of a safe for one Wicks, which was made either in 1874 or in 1875 (498—60). The man in charge of the tool department gives a glimpse of the character and amount of labor it required to cut and fit these threaded holes (480—75 to 83). When 1874 or 1875 is pointed to as the time when threaded bolts were first fitted into threads in this welded metal, I do not mean to say that it has been done, as a rule of practice, then, or since; but, simply that this testimony being closely examined, does not point to any earlier period. As to whether it was done at all I have this to say: No witness has been called to testify to it who was not at the time of testifying at work in Hall's factory. From the character of the work it is not possible to verify the correctness of their statements, as this would require a dissection of each safe said to be so constructed. Each of these witnesses swears, in direct examination, that all, or nearly all, of the safes made by Hall, in which these bolts were put, had the welded metal threaded, and yet each, in his cross-examination, limited his prior statement to a few

safes. Only one safe that any of these witnesses has referred to as having the welded metal plates threaded, had been examined during the period of its erection by any person outside of Hall's factory, within the knowledge of respondents. That safe was a large one built for the New York Safe Deposit Company, of New York. One, at least, of these workmen, witnesses of complainant, swears quite emphatically that it had its welded metal plates tapped, etc., (Klare, 494—7), like the others sworn to. Now, it so happened that John Farrel, one of the parties to the interference referred to, saw and examined with care, at different times, the plates for this safe—he thinks he examined about one-half of the plates—and he is quite emphatic that the welded metal plates were not threaded. He was advised that the threading of these holes was a feature of Hall's work, certainly an advertised one, and not believing that it could be done at all, was at pains to examine it carefully (170—14, 26, 27, 28, 29, 30). In view of this it is submitted that an examination of the reams of paper occupied by the testimony of these witnesses would not be compensatory. Even if your Honors should take a default upon us, on this, and assume that Hall had proved a successful threading of these plates during 1874 or 1875, and subsequently, we don't see that it would have much tendency to convince your Honors that Hall knew, at the time he applied for his patent, either that this welded metal could be had, or that it was capable of this use, much less would it aid you in construing the words, "series of alternate iron and steel plates," into "series of alternate iron *and welded* metal plates."

It has been shown, it is submitted, that neither of these three alleged differences between Hall's bolts of 1860 and 1867 is a difference of principle, and it follows, of course, that their aggregation can not amount to such difference. Before leaving the exhibit, "Hall's Conical Bolt," however, we desire to note what difference in principle the inventor himself finds to exist between it and his present patent, 33—52. By reference to this, it will be seen that the question asked distinctly for the substantial difference, as it ap-

peared to him, betwen his bolts of 1860 and 1867. Both the matter and manner of his answer are important to be observed.

The manner, for the purpose of contrasting it with his testimony above cited from the Interference (p. 16 *et seq.*, *ante*), where he swore that there was no substantial difference between these things. In the Interference, it will be observed, there is independence, dash and certainty, while the present answer is halting, involved, and doubting.

The matter illustrates the difference of manner. His answer in the present case may be stated thus: The conical bolts of 1867 are welded in a different way from those of 1860, and they are to be put in safes whose walls are composed in part of welded metal plates; while the bolts of 1860 were used in safe walls which did not have welded metal plates.

His hesitancy of manner in the above answer would be still further illustrated by referring to 35—58, 59, where he states, as his understanding of the drawing attached to his present patent, that it shows four plates of iron, and one (the central one) steel.

The arbors described in his present patent, instead of requiring a combination of steel and iron in a particular kind of weld, describes them as being made of the "hardest steel."

The answer in question is important, at least in one aspect: It shows the animus of this litigation. He would like to get a monopoly, indirectly, of the manufacture of safes composed in part of this welded metal.

I will close the discussion of this exhibit by referring to the opinions of a few of the witnesses as to its similarity or dissimilarity to the bolt or arbor of the 1867 patent.

Michael Hemler, Hall's superintendent for twenty-one years, can see no difference of principle between them, but the 1860 one is stronger, and would hold better. 219—12, 13, 14, 15.

John Talbott, superintendent of Hall's factory for four years, thinks "they are one and the same thing, except a slight difference in the shape of them." 208—13, 14, 15.

George Berkmeyer, who has worked at safes nearly all the time since 1855, and part of that time as foreman in Hall's factory, sees no difference in principle between the exhibit and a conical bolt. 203—68.

Knight (252—18) states the whole thing in a nutshell.

With one exception, we believe, we have noted all the arguments suggested by the record to show the dissimilarity of the exhibit from the conical arbor in issue, which exception is, that the exhibits differ because the conical bolt or arbor in issue is and has the functions of a "dowel pin," while the exhibit in question, in common with all the devices offered by respondents, which have been nicknamed "countersunk bolts," is not a "dowel pin." The argument is peculiar, and would be interesting to a student of mental phenomena. It has been propounded by the witness, Waterhouse, one of Hall's workmen, and suggests the inquiry, how long he must have pondered upon the subject to have produced so astonishing a result. A dowel pin is essentially a guide pin, and for that reason it is necessary that its transverse sections be of uniform size. A very common use of it may be found in the common measuring or foot rule. They are stuck in the edge of portions of the rule, while other portions of it have corresponding holes in which the projecting portions of the dowel pins enter, thereby enabling the rule to be folded compactly. The witness must have had hard work, indeed, to find a distinction between Hall's arbor and what is called a "countersunk bolt," when he was compelled to travel so far from the substance of the thing patented to find such distinction.

The Farrel & Weimar Conical Bolt.

In addition to what has been said above upon this use, we desire to add a few words. It has been discussed as the inducement which impelled Hall, in the interference, to show a public use of the invention in issue for a period of eight years prior to his application for his present patent; but it was not discussed as a distinctive anticipation of Hall's invention apart from the interference, and it was admitted

that the date of filing the rejected application of Farrel & Weimar, in the patent office, was too recent for such application to be in itself an anticipation of Hall's patent. It is now insisted, however, irrespective of the interference, that the *use*, by Herring & Co., of that bolt was a complete anticipation of Hall's invention.

The testimony in relation to the use of this bolt, the time it was used, and that such use was sufficiently early to anticipate Hall, has already been referred to (page 13 *et seq.*, *ante*), and it is not anticipated that any serious attempt will be made to throw doubt upon that testimony. Complainant replies to this exhibit, as he is understood, that it is not a conical, but a countersunk, bolt—not a long, but a short, conical bolt. Complainant has possession of the old Stevens safe, containing the first proved use, by Herring & Co., of the Farrel & Weimar bolt. It was opened by him, and the bolts withdrawn and offered in evidence. It appeared that they were not conical all the way. A melodrama is attempted. We said they were conical bolts, and lo! they have the identical things here, and they are not conical so far as they might have been. It will, of course, be understood as essential to this melodrama that respondents should not know that complainant had possession of this safe until after they, respondents, had closed their case, when it was brought out with a flourish of trumpets. One thing essential to perfect dramatic effect (which, however, was omitted) was to show that respondents had tried, at some time or other, to get possession of this safe. Unfortunately for this perfect effect, however, the facts appear to be that Farrel & Weimar always kept track of this safe, and constantly advised all inquiring for it as to its whereabouts, and neither they nor these respondents ever desired or attempted to obtain possession of it.

The discussion already had upon long and short conical bolts (p. 24 *et seq.*, *ante*) will answer the same objection to this and succeeding exhibits that may be charged with being short conical bolts.

These bolts are, however, conical through the layers of iron and steel, and into the layer of Franklenite, which is all

that ever was claimed for Herring & Co.'s use of conical bolts, when used in safes having a plate of this material in its walls. 105—45, 48, 77.

It will appear, however, from reading the testimony referred to, that they always made them conical throughout the wall when the plate of Franklenite was omitted. If complainant's counsel mean to argue that they were not so used in safes omitting the Franklenite, because these Stevens bolts do not go through the Franklenite, so as to resist the stripping of material that would fall to pieces with a slight blow of a hammer, they may have a monopoly of such argument.

The following testimony is referred to as to the substantial similarity of the Farrel & Weimar bolt with that claimed in Hall's patent in issue. Knight, 255—22; Hemler, 221—25, 26 and 27. This bolt has not the thread to interlock in the plates, and in addition to prior remarks as to the immateriality of this difference we refer to the testimony of complainant's chief expert, Millward, who says it is not a part of the invention: 16—13; 612—19.

Your Honors will observe that although the Farrel & Weimar exhibit, offered in evidence, is not conical all the way, their application for patent does show a bolt conical all the way, and, your Honors will further recollect, that it has been heretofore stated that the principal purpose for which rejected applications are competent evidence is to learn "the design of an inventor, and the principle, intended functions, and mode of operation of his mechanism," for which 6 O. G. 37, is cited. With this principle in view, reinforced by a recollection of Weimar's testimony: that the bolts were put in conical so far as the steel and iron plates went—the whole of the safe being alternate iron and steel plates, the bolts were conical all the way; part of the wall being alternate iron and steel plates, and part Franklenite, the bolts were conical through the iron and steel plates and into the Franklenite—it is not believed that the dramatic production of the Stevens safe, or any argument based upon the difference between a long and short conical bolt, will seriously obscure the facts. In addition to the

testimony as to the use of these bolts heretofore referred to, the following may be adverted to: Cady, 74—12; 78—32, 33; 80—44, 45.

Cady Use and Patent.

The next anticipation of Hall's conical bolt patent to which we shall refer is the Cady bolt. A reference to "Respondts. Ex. Cady Patent," p. 890–2, will show the thing relied upon at a glance. This is a rejected application of 1851, and is offered for a purpose similar to that of the offer of the Farrel & Weimar rejected application. It does not appear to us that there can be any serious dispute of fact in relation to Cady's use of the bolt here shown. There is a lengthy cross-examination of Cady, but it has reference to his testimony as to his knowledge of the use of the Farrel & Weimar conical bolt during the years 1864, 5, and 6.

The above exhibit shows a conical bolt—no doubt of its being conical all the way—made of iron—not hard steel, like Hall's, nor yet welded metal, as used by respondents—and a projecting cone upon its exterior or base. The structure in which it was used consisted of two plates of iron, and a mass of chilled iron between them. This chilled metal was poured while hot, the plates of iron being kept in their proper relation by the conical bolts while the metal was being poured. This was the reason the bolts were made of soft iron, as, if they had been made of steel, or of any mixture of steel and iron, the pouring of the hot metal would have softened them—so that it would have been useless to have put any metal into them that was capable of being hardened. He contemplated using a hard metal; but, for this reason, desisted. 79—38. These bolts were used by Mr. Cady from one to two years, when he ceased using them, and, instead thereof, made conical holes in the plates, which holes were filled by the soft metal while it was being poured. This metal, after it cooled, was as hard as hardened steel, being case hardened iron, and just as impervious to the attacks of a burglar. At any rate it took the place that the plates of hardened steel occupied at a later day,

and that is now occupied by the welded material in the manufacture of burglar-proof sales. Cady, 71—2, 3, 7, 8, 9, 10, 12, and 13.

It will be observed, when referring to this testimony, that bolts used by Cady during 1864 and subsequently were not made of the same material as his earlier bolts, but were the Farrel & Weimar bolts, made for him by Herring & Co. But no good reason has been, or can be, given why these iron conical bolts do not anticipate complainant's invention.

They had projecting heads, it is true, but these heads were purposely so shaped as to prevent the possibility of their being taken hold of with tools, and such heads were placed there as additional impediments to burglars, as they must have been cut away before the bolts could have been attacked. Indeed complainant's safes are shown, fig. 3, with an outside plate of soft iron, which could be easily removed by a burglar, when heads would be left projecting upon the bolts, by which they could be grasped by appropriate tools. This is necessarily so in the construction of all safes using these bolts, and would it not be an approach to silliness to say that when one plate is removed leaving heads projecting upon the conical bolts that they then ceased to be conical bolts? 16—+8 and + 11.

The only other reason that can be urged against these bolts being held an anticipation of complainant's invention, is the difference of material from which the bolts are respectively made. Does this make such a difference of principle as to make them different things? I say not. But if it did complainant could not profit by it. He, complainant, describes his bolts as being made of the "hardest steel;" Cady made his of soft iron, while defendant's are made of welded steel and iron. Cady used soft iron in his because, from the character of his structure, it would have been useless to have used any other material. Complainant made his of "hardest steel" because, the plates of his safe being alternate iron and steel plates, they could be, respectively, broken and cut away, and it was useless to provide a bolt that would resist pounding or breaking, when the other portions of the safe wall were not intended to re-

sist such pounding or breaking. Respondents make theirs of welded iron and steel to resist drilling, or crumbling, by pounding with a sledge, because the remainder of their structure—alternate plates of iron and of welded iron and steel—is adapted to resist these forces. If a conical bolt of iron is not substantially the same thing as a conical bolt of steel, then a conical bolt of welded steel and iron is not substantially the same thing as a conical bolt of the "hardest steel." That counsel for complainant felt the full force of this, and the consequent weakness of his position, is evident from his examination of Cady, 84—67; also from his examination of Farrel, 175—47 to 52 inc.

Do counsel mean by this examination to show the weakness of a structure that does not embody welded metal, and thence ask your Honors, in view of the fact that the invention secured by complainant's patent consists of "good workmanship," to inject welded metal into the patent?

That this change of material is not patentable, see:

Hotchkiss v. *Greenwood*, 11 How. 248.

Hicks v. *Kelsey*, 18 Wall. 670.

Smith v. *Goodyear Dental Vul. Co.*, 93 U. S. 487.

Goodyear Dental Vul. Co. v. *Davis et al.*, 102 U. S. 122.

In the case in 93 U. S. the law upon this subject is reviewed very fully and the Cummings patent sustained. In order to do this the Court held that the process of making a set of teeth of hard rubber is a portion of the invention patented. The Court not only do not criticise the earlier cases cited, but they affirm them. The decision in the case from the 102 U. S. reviews that in 93 U. S., and points out that had it not been for this new process of making a set of teeth and gums being held to be a part of the invention patented, the argument that Cummings had merely substituted one known material for another, must have prevailed and the patent have been declared invalid.

It is submitted that this leaves the law precisely where it stood after the decision of *Hotchkiss* v. *Greenwood*, and that Hall's patent is anticipated by the prior use of Cady.

Butler's Prior Use and Patent.

Under this heading we propose to show a proved prior use of hard conical bolts. The patent referred to above is a rejected application of 1855 for a patent "Respdts. Exhibit Holmes & Butler," p. 885, pl. 1. The identity of the thing used, being shown and described in the rejected application, ought not to be in dispute, if the cases heretofore cited, upon the proper function of rejected applications in cases of this kind, can remove it from dispute.

A glance at the drawing sheet I, will show the conical bolts D. On this diagram the heads protrude slightly, but on sheet 2, where only the heads are shown, they appear flush with the outside plate. In the specification they are represented as being without heads: "D Plugs of tempered steel made taper and without heads." This being so obviously a matter of the artizan's judgment, and, in effect, so stated in the specification, it shall not be referred to again.

Are these conical bolts within the meaning of Hall's third claim; and have they been used at a time sufficiently early to anticipate Hall's invention? I should think that there was no doubt that they were "conical or tapering arbors in combination with two or more plates of metal," and they are, like Hall's, made of hard steel. The expert witness, Knight, thinks they are the same thing as claimed in Hall's patent, 257–26. Complainant's chief expert, Millward, 19, *et seq.*—23, 24, thought, when examined on the *prima facie* case, that the bolt D, shown in the Holmes & Butler exhibit, was not, as there shown, within Hall's invention, because the safe it was shown in connection with, had not its whole wall composed of plates, but was in part composed of chilled iron. The witness further stated that if such bolts were used in a burglar-proof safe, whose walls were composed of a series of plates, and the bolts properly secured they would, "OF COURSE, BE THE HALL CONICAL BOLT." It ought, however, in fairness to the witness' reputation AS AN EXPERT, be stated that when he made that admission

respondents had not yet taken testimony showing a prior use of such bolts in just such safes as the witness had described as being essential to make that bolt D a conical bolt. And, it ought further to be stated, in extenuation of the witness' apparent candor, that when he was called in rebuttal by complainant, after respondents had taken testimony showing the public and continued use of bolts D, in safes composed of alternate layers of different metals, for and during a period of time, sufficient to anticipate Hall's invention, he took the back track readily, if not gracefully. 610—15, 16.

In connection with this rather *expert* testimony, it is important to note the character of claim made by Holmes & Butler: "We claim the combination of wrought and chilled iron forming the doors and frames of safes or vaults so arranged by means of peculiarly shaped tempered steel plugs, or their equivalents, to prevent their being separated by wedges, or similar instruments, as above described."

From whence it appears, 1st: That the function described by Holmes & Butler is the only function described in Hall's patent.

H. & B.: "To prevent their being separated by wedges or similar instruments."

Hall: "Present serious obstacles to the removal of successive plates forming the body of the safe."

2d: That H. & B., by the very limited character of the combination they attempted to claim, recognized, that, even at that day, 1855, the subject of conical bolts was too old to be monoplized as a whole. And this is confirmed by the witness, Butler, 141—131, who says, that at the time of his application he was not the inventor of conical bolts—but believes he was the first to apply them to safes to hold the different plates together. We only desire to add that any construction of Hall's patent, that would save it from anticipation by these H. & B. bolts, would limit it to the character of workmanship—an unpatentable subject-matter.

Wm. H. Butler, one of the applicants of the above exhibit, is called in the case and testifies to a continuous use of bolts, such as described and shown in the application,

and of similar material, from 1853 to date. The first use of these bolts, that the witness is certain of, was in a safe which seems to have been well known to New York safe-makers, and was known as "Butler's Red Burglar-Proof," and sometimes as the "Red Panel Safe;" so called from having its panels painted red. This safe in addition to angle iron frames, shown in the H. & B. drawings, had a series of alternate hard and soft metal plates between such frames, instead of the chilled iron contemplated in the specification. The bolts, of which there were many in it, were substantially like those described in the specification in form and material. This safe was exhibited at the "World's Fair" at New York during 1853, known as the Crystal Palace Fair. The heads of the bolts projected, as shown in sheet 1, and were polished so that they attracted general attention, and according to his best recollection a specimen bolt lay upon the top of the safe, which was used by Butler to explain to all inquiring, and very nearly all did inquire; their curiosity being aroused by the little polished heads projecting from the safe. 118—2, 3, 4. Cady testifies to a knowledge of this safe, at the time it was exhibited, and to the fact that conical bolts *were* then said to have been used in it. 78—32. It appears that Butler has continued, as the occasion required, or permitted him, to use these conical bolts down to the present time.

Their forms were changed commonly, as his judgment suggested, and, in accordance with that judgment, they were often omitted. In order to understand his rule about it, it will be necessary to state, first, that safes intended to give protection against burglars have been constantly and gradually increasing in thickness, and in resisting capacity, for the past thirty years. Thus the door of the Red Burglar-Proof safe was "an inch and three-quarters to two inches thick," 137—104, and it appears distinctly throughout his deposition that this was then considered a very thick safe—an unprecedentedly thick burglar-proof safe. The average burglar-proof safe is made twice that thickness now, 441—104, 105, and what would be called an extra

large one—as the Red Burglar-Proof was then—would be three or four times as thick as that was.

Now, Butler thought it injudicious to use bolts conical throughout their length in very thin safes—two plates thick for instance—in which case it were better that but one of the plates should be countersunk, for if it were conical through both plates it would not be difficult to drive it into the safe, whereas if the outside plate only was countersunk, considerable conical resistance might be provided, without making a weak place on the inner end of the bolt, consequent upon continuing the taper the whole distance. In order to appreciate the force of Butler's reasoning in this it will be necessary to recollect that the taper upon such a short bolt, for whatever distance it goes must be more abrupt than upon a longer bolt in order to give any real resistance. Upon safes somewhat thicker—three or four plate safes—it was his opinion that bolts conical all the way ought to be used. Upon safes of both these kinds he thought it an undesirable incident that any fastening devices passing clear through the safe should be used—but, because of the limited thickness of these walls, it was, in his judgment, an unavoidable evil. When, however, it came to safes of a still greater thickness—six or seven plate safes—it was possible to have two sets of fastening devices in the walls, neither of which should go clear through, and yet each be long enough to be conical all, or nearly all, their length.

In pursuance of these ideas of his, he constantly changed his mode of operation, as the safe he had to make was more or less thick, and as safes gradually increased in size, as time wore on, a careless reading of his deposition might convey the impression that his ideas or judgment of this matter was continually undergoing change. The fact was, however, that for some considerable time after he built the Red Burglar-Proof Safe, very few safes were built of a thickness which in his judgment justified him in using his bolts conical for more than the thickness of the outside plate. And, in more recent times, the greater thickness of safes permitted him to use bolts conical substantially their

whole length, and yet not use any device that went clear through the safe. Of course, it never occurred to Mr. Butler that there was any difference of principle in any of these devices, for he thought when he applied for the patent, that it would cover any kind of a conical bolt, whether conical through one plate or more, when used in connection with the plates of a safe. These remarks appear to be needed because in the extraordinary cross-examination that counsel saw fit to make of this witness there appeared a belief upon the part of counsel that the witness, because he did not always use his bolts conical all the way through the safe did not know the use or value of conical bolts. The following references to the witness' testimony will illustrate the witness' practice, as well as his opinions, upon the subject: pp. 119, *et seq.*; ques. 6 to 12 inc.; 18 to 22 inc.; 49; 61, 62; 76 to 79; 82; 84; 89, 90; 119; 131.

Mr. Butler used these bolts, or arbors, also for moving the lock and bolt work, "Respdts. Butler Exhibit Pacific Bank," p. 121, is a working drawing of one put in by him prior to 1860 in the Pacific Bank of New York city, which arbor is still in use, or was while Mr. Butler was under examination, 121—13 (marked 23), 14, 15. The witness' knowledge and use of conical arbors, stationary and revolving, for the protection of lock and bolt work, as well as the plates of the safe, was quite as extensive as his knowledge and use of arbors and bolts used only for the protection of the plates. 142—136 to 139 inc.; 156.

Uriah B. Cooper also testified to the Butler use of these various bolts. He worked for Mr. Butler from 1860 to 1865, as foreman, and subsequently, at different times, but was not in his employ at the time his deposition was taken. He offered in evidence "Respdts. Ex. Valentine & Butler Cooper Bolt" as illustrating the conical arbors used by Butler during the above period, and described wherein the exhibit differed in form from bolts used during the same time by Butler for securing the plates only. He says the latter kind were in constant use during the said period, and that their various dimensions and proportions differed according to the character of the safes in which they were to be put.

He also offered in evidence "Respdts. Exhibit Cooper Reamer," which he recognized as a reamer that he had made in 1861, by one of Mr. Butler's workmen named Frederick Youngan, and which he said was in use, more or less, during the time that he was there for shaping the holes in the safes for these different bolts, and arbors, whether used alone for the protection of the plates, or whether they had the additional function of operating the lock or bolt work when such bolts or arbors corresponded in size, etc., with the exhibit. The following will give the substance of this witness' testimony: pp. 150 *et seq;* 2 to 6 inc.; 35, 36, 37, 39, 40, 42, 51, 52, 54, 55, 56, 57, 87.

It will be observed upon reading the testimony of Messrs. Butler & Cooper that neither of them is able to give a list of the safes made by the concern during the early period of time containing these bolts; that it was not customary at that time to make book entries of the different devices that entered into safes, and hence they had nothing but their memories to rely upon for details. Under these circumstances it ought not to be expected that either of them would be able to give accurate descriptions of safes built many years ago. But can any other inference be drawn from reading their testimony than that the witnesses are impartial and honest? It is true that the farther back either of them attempts to go the less definite as to details he becomes, but if it were otherwise would it not be a just cause of suspicion? It will also be observed that complainants, in their mania to prove a difference of principle between a long and a short conical bolt, *expert* the witness Cooper, although no attempt was made to expert him in the direct, and succeed in proving that he is not an expert swearer, 158—42, 44, but whether this Court will think more or less of the witness on this account will depend very much, we suspect, upon how familiar your Honors have made yourselves with the qualifications of an expert as exemplified in some of Hall's workmen, etc., called in this cause.

An argument of no mean value as to the impregnability of these winesses' testimony might be drawn from the industrious and persistent efforts of complainant's counsel to

bring a great many of their utterances *ex parte*, and otherwise, of the authenticity of which there is grave suspicion, into the record, that wordy criticisms may be indulged in upon comparison of such statements with their testimony.

But the argument that appears to be relied upon by counsel to show a difference of substance between the Butler bolts and Hall's invention is, as nearly as I can gather it from the record, that Butler, in his use of these bolts, thought it advisable, in many cases, to attempt, by means of the bolts, to draw the plates more tightly together, while Hall and his experts do not think it advisable. This is a fair statement of the difference between these experts and Butler. There is, in this respect, no difference between Butler's mode of using the bolts and the Hall patent, for, it, the patent, describes the function of the bolt as "binding the plates into a compact mass," which is only another way of expressing Butler's thought. But if the difference alleged between these uses of the bolts really was a difference between Butler's use and the Hall patent, which it is not, it would be unworthy of serious discussion in view of the recognized rule of law upon this subject.

Roberts v. *Ryer*, 91 U. S. 150, before cited.

Love Conical Bolt.

This is shown in "Respondent's Exhibit Love Patent," p. 938 *et seq*, which was granted to John B. Love for "Improved Means of Attaching Armor to Navigable Vessels and Water Batteries," Oct. 2d, 1861. The "Respondent's Exhibit Love Conical Bolt," is offered by respondents as accurately representing the bolt described and shown in the Love patent in size, and all dimensions, and proportions, 256—25. It does not purport to represent the material, which is left, by the patentee, Love, as it ought to be, to the judgment of the constructor. The plates through which it passes are described as being of iron or steel, and, the inference, of course, is that the bolts shall be made of the same material as the plates—iron when they are iron, and steel when they are steel. Does this bolt anticipate Hall's

invention? It is certainly a conical bolt, not only within the purview of complainant's patent, but within the terms of any intelligent definition given by any of his experts. Counsel's reasons for alleging that this bolt is not the equivalent of the bolt claimed in the Hall patent are given fully, we presume, in the testimony of Mr. Millward, their leading expert, which will be found at 613—24 to 30 inclusive, and a careful examination of it will be found more curious than instructive.

The expert's objection, the only one we can gather from his mass of words, to the identity of the Love bolt with the Hall bolt is (613—26) that the Hall bolt is not, and can not be used to draw plates laterally together. Does the witness mean that for the purpose of this comparison the Hall bolt should be assumed to be threaded? He certainly has not displayed sufficient recklessness at any time during his testimony to say plainly, and candidly, that the threading was an essential part of the Hall invention. He was too intelligent a mechanic to assert that the threading of a bolt conical, or otherwise, would be a patentable invention. Indeed he stated within a few minutes of the time of giving this testimony, that the thread was not an essential to the Hall invention, 612—19. We rather infer that his meaning here is that the Love bolt differs from the Hall bolt because it performs one function—the lateral drawing—that is not necessary to be performed by a conical bolt in a safe; that is: the Love bolt differs from the Hall bolt in substance because, although it is the same thing as the Hall bolt, and performs all the functions that Hall's bolt is required to perform, it performs one in addition. And we are convinced that this is what he means, too, from reflecting that he reasoned in the same way, in reference to a similar comparison between Hall's conical bolt of 1860, and the one in issue here, where, it will be recollected, he thought that the bolt of 1860 differed from the one in issue, because the former had an additional function or capacity as compared with the latter, in that it gave protection in addition to the plates to an inclosed lock arbor. And, still further, he employed precisely the same character of reasoning in com-

paring conical lock arbors with the arbor, or bolt in issue, for he said that the former, in addition to their capacity of giving conical resistance to a burglar, were capable of revolving.

Of course such reasoning admits substantial identity between the exhibit in question and Hall's bolt, in so far as Hall's invention is concerned, and that is all that is material to this cause.

There is one other thing in the testimony above referred to, that is worthy of notice. We refer to ans. 27, p. 614. Passing over the witness' complaint, or whine, that the Love bolt is not what he has been calling a countersunk bolt; and, also, passing over his intimation that the Love bolt is not the Hall bolt because a countersunk bolt would have answered Love's purposes just as well, and if he, Love, had shown such countersunk bolt, it would have been an easier matter to have shown it to be different from Hall's—to the statement that, for the purpose of drawing to the vessel's side, a conical and countersunk bolt is the same thing, and operates in the same way. We are quite sure we do not mis-state the testimony of the witness. Now, drawing "towards the vessel's side" is the direction in which, it is said, all our exhibits draw, that complainant says are countersunk, and not conical, bolts. The capacity of doing this has been taken all along as the criterion of a countersunk bolt, as distinguished from a conical bolt. Your Honors are referred to 635—80, and context, where it will be seen, this witness strenuously insists that the possession of this function of drawing—or, more accurately speaking, the mere possibility, even in theory, of a bolt having this capacity, is said to be finally, and conclusively, decisive that such bolt is not a conical, but a countersunk bolt. But now the witness says that the exhibit Love bolt has this capacity to the same extent as a countersunk bolt would have it. We have insisted that the difference between what complainant calls a countersunk bolt and what he calls a conical bolt was at most one of degree, if indeed it would not be more accurately expressed as being a difference in quantity, but counsel's one argument, with which they have contested this, was that this difference of

degree brings a difference of result, and hence, they say, there is a difference of substance. But this Love bolt being, within their most literal, and wordy, definitions, a conical bolt, and their old argument being useless against it, they admit that their drawing distinction has no basis in reason or fact; and, it will be noted, this admission is not made inadvertently, but for the purpose of arguing that the Love bolt ought not to be held an anticipation of complainant's patent because a countersunk bolt would have answered Love's purpose just as well—in short their argument, when analyzed, is, that Love had no business to anticipate Hall.

"AUBERLIN CONICAL BOLT."

We say respondent's exhibit of the above title is a perfect anticipation of Hall's invention. "Respondent's Exhibit Auberlin Patent," p. 874, is a copy of file and contents of an application for a patent by Auberlin, upon his conical screw bolt, which was rejected. The exhibit is introduced for the purpose that other rejected applications have been introduced into the cause, to wit: to authenticate the, otherwise proved, use of the things described therein, and to show the design and scope of their use, and the principles embodied.

An examination of the exhibit "Auberlin Patent" will show, figs. 4 and 6, the conical screw bolts separately, and in their intended use. The specification after describing the method in common use for securing the back plate to a safe, of a construction therein referred to, says, in reference to the old mode and these screw bolts, and the object of their use: "In order to break into the safe it is only necessary to remove the putty, unscrew the screws, and the back is easily removed. My invention consists in substituting a headless screw E, E′, the screw thread being made through the frame plate, as well as through the back plate, and angle iron, the *tap* tapering toward the inside; the screw E, E′, is made of a piece of wire as shown in fig. 6, and the thread is cut tapering, it is screwed through the frame plate and back, into the angle iron until it can be turned

no further, is twisted or cut off and finished smooth with the frame plate. It is obvious that this will fasten the back even more firmly than it can be done by rivets."

Our reasons for saying that this screw bolt is a perfect anticipation of complainant's invention will be found fully, and tersely stated, in the following answers. Knight: 256—24; 299—196, 197, 198, 199.

While giving this testimony the witness had in mind the testimony of Auberlin, which showed that he, Auberlin, was engaged in the business of manufacturing safes in San Francisco, Cal., for about seven years; that during five of these years, commencing with 1861, he used these conical screw bolts in precisely the same manner, and for the purposes described in his specification, to wit: the better to resist efforts of burglars, in all the safes made by him; that he made about three hundred safes containing such conical screw bolts, and gives the names of nine hotels, etc., in San Francisco, which got these safes, and, as he believes, still have them in use. Auberlin, 238—2 to 11. There can be no dispute about the facts, and, we may add, testimony given upon the screw bolt described in the exhibit Auberlin patent, will apply equally to the use of which Auberlin testifies. Complainant's reasons for the statement that this bolt is not an embodiment of complainant's invention will be found at 607—8, 9, and with the exception of the numerous adjectives, are, 1st: The Auberlin bolts were not used in a burglar-proof safe, and are not drill-proof. 2d: They are not riveted upon the inside.

If an analysis of the above testimony furnishes any other reason than the above for the statement that they do not embody Hall's invention I have failed to find it, unless, indeed, it be that the exhibit is too small to contain so large an invention as complainant's.

Both of these reasons are fully answered by the testimony above referred to of the witness Knight. There is no such distinction between a fire and a burglar-proof safe, as Mr. Millward hints at. No safe is called a fire-proof safe unless it has an inner wall of material of very low conducting power for heat. But every safe is, in some de-

gree, a burglar-proof safe. No safe ever was made, or that ever can be made is, or will be, absolutely burglar-proof. One safe is proof against the professional burglar for four hours, another of thicker walls for six hours, still another for twelve, sixteen or twenty hours. All safes are made, in part, of iron, in some of its forms, but burglar-proof safes are not universally made of any particular kind of that metal. Indeed, as we have seen, it is quite common in the East to get their burglar-proof protection, in the main, from layers of zinc ore—Franklenite. It is sometimes obtained from cast iron, sometimes from chilled iron, sometimes from a mixture of steel and iron, and sometimes from welded metal. The safes built by Auberlin were made in the main from common wrought iron, the screw bolts passing through three thicknesses of the metal. Some of his safes were made stronger than others in order that they might be "more burglar-proof and more fire-proof," 238—5. He describes, 239—8, the object of using these tapering screws to be "to secure against the punch or screw driver." Surely this is not resisting the action of fire? His file and contents, "Auberlin Patent," is filled with allusions to the utility of his device as a means of resisting thieves. The walls of his safes, being made of wrought iron, of course he describes his conical boltes as being made of the same material; as it is obvious it would be quite useless to make them of any material capable of giving greater resistance. In this complainant follows his example, for having described his safe as being made of steel "alternate iron and steel plates," he describes his bolts as being made "of the hardest steel." And so with defendants, as they make their safe walls of alternate layers of iron and welded metal they use bolts made of the latter material. It seems to be a pity to be compelled to seriously discuss such proposition as this, but when I turn to this unprecedented mountain of testimony, the great mass of which consists of bases for the kind of argument that I am engaged in combating, I feel that the Court will hold me excused for pointing distinctly and appropriately to the stuff.

Again, it is said that Auberlin did not rivet his bolts! Do they mean to argue from this that Hall's invention consists in riveting a bolt? And, if not, what is meant by the criticism? Auberlin says quite distinctly that one object of his invention is to avoid riveting, as it would be "inconvenient" to rivet them in this position after the back plate is put on. But he shows the alternate bolts or rivets, B, in the same position, riveted. Why? Is not this a suggestion that these tapered screw bolts may be riveted when used in positions in which it is convenient to rivet them? The witness Knight has stated this as the only intelligent purpose to be gathered from the drawing. The expert witness, Millward, denies this, of course, but fails to give any reason for the fact that they are so shown, and this, although he is pursued through a series of questions to state some reason for the fact other than the one pointed to by Knight. 638—92 to 95 inc.

The law applicable to this undoubtedly is, that if it would require invention, notwithstanding the suggestion above adverted to, to rivet the ends of these conical screws, they would not anticipate complainant's invention, and, *vice versa*, if invention would not be required to accomplish that end then they do anticipate complainant's invention. We desire to apply the reasoning of complainant's experts to this question: Your Honors will see from an examination of complainant's patent that no means are described for getting Hall's bolts into their places in the walls of a safe. A similar principle of law is applicable here: If it would require invention, in addition to what is said in complainant's patent, to insert these bolts then the patent is void for want of the specification required by the statute, sec. 6, act of 1836, while upon the other hand, if any ordinary mechanic, "or persons skilled in the art," could, from an examination of the patent, or the bolt, devise means from his ordinary mechanical knowledge, and without invention upon his part, to insert these bolts in their intended places then the specification would be sufficient. It will be seen that the questions: Whether it would require invention to rivet Auberlin's taper bolt, or to insert complain-

ant's bolt, are of the same character and their solution involves similar results, the difference being, upon the surface of things, that the insertion of complainant's bolt would be the more difficult problem. One of the respondent's witnesses, a safe maker of nearly thirty year's experience, stated that he could not from an examination of complainant's patent insert these bolts (144—149), and this remark, of this witness, it will be noted, came as the result of his own study of the patent, for he was not asked the question directly, although it was fairly enough within the scope of the answer called for.

These problems were put to one of complainant's experts (Wadman, 529—86) as to which would require more, if either would require any, invention, to supply these deficiencies respectively, to which he answered that neither of them would require invention. Thus we have the admission that this bolt of Auberlin's is complainant's conical bolt, unless the difference of material constitutes invention. It may further be noted here, that Auberlin's and complainant's bolts are made and inserted in precisely the same way. Auberlin, 240+9; Corry, 556—21; 586—220.

In reference to this exhibit, it is a conical bolt, tapering all the way, threaded all the way, made and inserted in precisely the same manner, "in combination with two or more plates of metal," in fact passing through three plates of metal, intended to give resistance to burglars thus making its use a use in a burglar-proof safe, and was in use for five consecutive years publicly in the United States, and three hundred safes, or thereabout, contained it before complainant applied for his patent, and we submit, as before stated, that this is a perfect anticipation of complainant's invention.

As the exhibit "Auberlin Patent" is the last rejected application we shall have to take notice of, we feel prompted to call the attention of the Court to the unusually large number of rejected applications that have been offered, showing these conical bolts in one form or another, and to remark upon the apparently rather singular fact that none of them could get a patent for this device but this complainant.

Nor have I shown all the rejected applications for this device that have come under my observation, for under recent decisions of this Court, rejected applications for patents are not sufficient to anticipate a patent, except when taken in connection with a prior public use of the thing described in any such rejected application. I have also to observe that some of these applicants did not submit gracefully to defeat upon a first rejection, but fought persistently, in the usual legal mode, for their patents (notably is this true of Auberlin) until convinced by decisions given against them on appeal to the higher tribunals of the Patent Office that they had not made inventions that were patentable in view of the state of the art. It may also be observed that the complainant here was more fortunate, for an examination of his file and contents—and this is true of both complainant's patents upon which the bill of complaint is founded—shows that the office passed all his claims and specifications without criticism of any character, precisely as they were presented. To those familiar with the fact, in Patent Office proceedings as at present conducted, that nothing less than a new and useful earthquake is expected to pass without some criticisms being made, and some limitations insisted upon, and that hardly one patent in a thousand so passes, it would seem to be more than passing strange that a patent of this character should pass without even a scratch. Indeed the "file and contents" offers very persuasive evidence upon its face that no official scrutiny was ever bestowed upon it.

Other Exhibits.

Two other exhibits are offered in evidence, which further illustrate the history of the art, at the time this patent was granted.

They are respectively "Wagon Shackle Patent," 933 *et seq.*, and "Iron Armor," 945.

The former is a patent granted during 1865 for an "Improvement in Wagon and Shaft Shackles." It shows a "tapering screw bolt," conical and screw threaded throughout, and secured by a nut. This screw bolt, if inserted and

secured in a safe, just as shown in the exhibit, would be complainant's conical bolt. We don't see that there could be any dispute about that. The but end of course would have to be cut off to make a workmanlike finish, as the witness Cory describes (586—220), they are in practice cut off by complainant; but this is assumed to be a mere matter of mechanical detail; and, for that reason, not described in complainant's patent. It is not apprehended that counsel would argue that the presence of this head, as shown in the exhibit, would make a substantial difference between this device and complainant's bolt, because such argument, in view of the notable void in the specification of complainant's patent, would be an indirect argument that said patent is void for want of a proper specification. The only difference, then, worthy of mention between the screw bolt here shown and complainant's bolt, is the difference of their application —they are applied to different purposes. This makes what is well known in the law as a double use, and which is not patentable; but, before disposing of this exhibit, we shall take into consideration the exhibit:

"Iron Armor."

This is an extract from a printed publication, "London Artisan," for June, 1863, 945, and is a description accompanied with pictoral illustrations of iron armor for ships of war. It shows various devices for securing the iron "armor," and, among others (fig. 7), cylindrical screw bolts. These bolts, if conical, there can be no doubt, would anticipate complainant's invention. And, while it might be argued, if necessary to the cause, that these bolts, because of the unquestionable identity of all their functions with that of conical screw bolts, are, in themselves, in the use shown, the equivalents of a type of the complainant's bolt, and consequently an anticipation of his invention; yet, in view of the fact that a simpler argument presents itself upon them, we shall not dwell upon their identity. Thus: if the wagon shackle screw bolt were used, instead of the bolts shown in fig. 7 of iron armor, no decent argument could be made that such

bolts so used would not be an anticipation of complainant's invention. The bolt being known (Wagon Shacke Patent), and the use being known (Iron Armor), it ought not to be seriously claimed that it required invention to substitute the wagon shackle bolt in the iron armor use. This, it seems to us, is too evident for us to be justified in making any extended remarks upon it. Heald *v.* Rice, 104 U. S. p. 737, par. But we will add, before leaving it, that such collections, when they introduce a new mode of operation, are called combinations, and are patentable; but, unless a new result is produced, by the co-operation of the things united (something essentially different from the operation or result of either one of them), the union is a mere aggregation, and unpatentable. No new result has been attained by complainant.

The use of the conical bolt, a circular wedge, has certain advantages, well known to Archimedes, and ever after; these advantages, or some of them, complainant utilizes in the wall of a safe, as others had done before him. They are recited, too, these advantages are, in a tiresome way throughout the record; but it will be noted that nearly every witness who is made a trumpet for this purpose admits that he was familiar with these properties of conical bolts prior to complainant's alleged invention.

Thus: Hendrickson, who discourses quite volubly as to the importance and value of conical bolts, and the difference between them and countersunk bolts, says that he has learned nothing about conical bolts within fifteen years, and doubts that he has learned any thing about them inside of forty years. 422—207, 208.

And the witness, Corry, complainant's superintendent, says that he could not tell when he was not familiar with all these properties of conical bolts, which are so persistently held up to review as the characteristics of complainant's invention; that he has been familiar with them since he has been among mechanics. 574—139, 140.

And complainant's expert, Albert Betteley, who describes himself as being "a Boston man, and very well known," and whose "advise has been sought, from time to

time, for many years," by all sorts of people, and for all sorts of purposes (375—37), states that he has had forty years' experience as a mechanic, and has been familiar with conical bolts during all of that time. 370—8 to 11, inc.; 14 to 18, and 35.

An examination of the testimony of Betteley, above referred to, can not fail to illustrate the character of this litigation. He was introduced by complainant to swear to a pre-arranged story, but somehow flew the track. His testimony, taken as a whole, amounts to this: That he had an intimate knowledge of the use of conical bolts for binding the plates of safes together for forty years; that the device was such an obvious one that he never took any pains to inquire who did or who did not use them; that he was not familiar with the use of conical bolts, made as long as they are made now, when he was in the safe business, because at that time the walls of safes were not made so thick as they are now made, and the shorter bolts filled the thinner walls.

Respondents have alleged one other prior use, which, as it is their own, has been reserved to the last. It is a patent granted to respondent, Macneale, and a former partner, Dodds, for lock for safe during 1862.

A glance at fig. 13, and a reference to the specification, will show that it is a steel arbor or bolt, of which there are two shown for operating the lock work. These do not differ essentially from the arbors before referred to in connection with the Butler testimony. But in view of some of the arguments of counsel to the effect that a conical arbor *ex vi termini* differed from a conical bolt, because of some weakness, necessarily incident to the former, by virtue of its capacity of revolving, it may be profitable to examine the exhibit. It will be seen that they are conical throughout; that they are secured interiorly by being screwed into collars, that revolve with them, which collars bear against projections provided in the door, whereby it becomes impossible to withdraw them; that these screws are locked by keys screwed from the interior, whereby it is impossible to unscrew the arbors; and one of them, C′, is provided near

its exterior with a shoulder to prevent wedging; thus showing that a sufficient looseness of fit to permit revolution is entirely consistent with a construction as absolutely secure as if the bolt or arbor was fixed and incapable of revolution. This bolt, thus patented to them, defendants now use in their burglar-proof safes, and when used by them for securing the plates together only, their revolution not being required, the threads upon the bolts fit into similar threads in the iron plates of the safe, instead of fitting into threads in the revolving collars, which collars are not neccessary in the stationary bolts, and they thread their bolts for such distance as their judgments suggest, and it is respectfully submitted that in doing this they infringe no right of complainant.

RESUMÉ.

First, it has been my aim to point out, from the language of the patent itself, that the invention secured therein was of a device that tapered to resist stripping, which, if I was correct in that, would be anticipated by every exhibit offered by respondents. Second, I aimed to point out, as matter of law, that the patent must be so construed, for to do otherwise, would be, for the Court, in effect, to grant a new patent, not only for a different subject matter from the patent that we were called upon to meet, but for a subject matter not patentable under the statute—for mechanical detail, or shop expedients. And, in doing this, I have relied exclusively upon decisions of this Court, and decisions too, especially that of *Russell* v. *Dodge*, 93 U. S., that bear upon their faces evidence of most elaborate care.

I have attempted to show that the complainant's invention was necessarily decided in the interference referred to, to be embodied in the bolt patented to complainant in 1860, and used by him publicly since 1859, and that such decision became a part of complainant's title, and estops him, ever afterwards, from alleging any thing to the contrary; and in doing this, I have relied upon the general principles of the law of estoppel; and, have shown too, the

general recognition of the applicability of these principles in the administration of the patent law.

In addition to this, I have shown such a general use of conical bolts, since 1851, for every purpose and such a general knowledge of them, and of all their functions, among ordinary workmen, as to preclude the possibility, it is submitted, of any reasonable construction being given to complainant's patent upon which the patent could escape the judgment of want of novelty, thus: Cady made and used such bolts in 1851, and succeeding years, which differed only from complainant's in the material of which they were composed, and in the mode of securing them in place.

Butler made and used such bolts publicly during 1853 and succeeding years, conical throughout, and of drill-proof material, and attempted to patent them at that time but admits that, even then, there was nothing new in them, unless it was in their use in connection with safes, but even in that use, Cady was ahead of him, and he, like Cady, failed to get a patent.

Complainant publicly used bolts from 1859 on until he got his present patent, and patented them in 1860, which only differed from the bolt in issue in that it had one additional function.

Respondents took a patent in 1862, five years before the one in issue was applied for, which only differs from complainant's in the fact that it has one additional function to that of Hall's.

During 1864, Herring & Co., and Terwilliger & Co., each used the bolts of Farrel & Weimar in great numbers three years before Hall's invention, if his invention is not dated back by his 1860 bolt, in which case, by that token, it is public property. The only objection to these bolts, or to those of them that we could examine, is that they are not so long as Hall's.

During 1861, Love's patent was granted. The only objection to the conical bolts shown there, and I state fairly, as I submit, the result of complainant's expert's reasoning, is that Love had no business to show conical bolts as the functions to be accomplished by him could have been per-

formed, or at least most of them, if he had used something else in place of conical bolts.

Auberlin's bolt was used from 1861 on for five years, and a patent was refused upon it during the year named. It does not differ from the bolt used by respondent, except in the material. As used by Auberlin, it was inconvenient to rivet it, but instead thereof, his specification shows how it may be done—if that were necessary. The only objection that is understood to be made to it, is that "it is such a little one."

And now, may it please your Honors, it is submitted, as an explanation of the apparently spasmodic use of these bolts, that has tempted complainant to make this and the preceding venture for the monopoly of them, that safe-makers used or omitted to use them for the past thirty years or more, depending upon the judgment of the manufacturer as to whether or not they would add to the burglar-proof capacity of any particular safe, and whether or not the price they got for any such safe justified them in putting in these devices; and so, in regard to their length, the problem was what length was adapted to any particular safe, and how long it was necessary to make them in order to sell the safe—in short, that the explanation is to be found wholly in mercantile causes.

JAMES MOORE,
Counsel for Appellees.